

DEPARTMENT
OF
COMMERCE

MISCELLANEOUS
PUBLICATIONS
OF THE
NATIONAL
BUREAU
OF
STANDARDS

NOS. 271 - 274, 276 - 277





Guide To Instrumentation Literature



United States Department of Commerce
National Bureau of Standards
Miscellaneous Publication 271

THE NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards is a principal focal point in the Federal Government for assuring maximum application of the physical and engineering sciences to the advancement of technology in industry and commerce. Its responsibilities include development and maintenance of the national standards of measurement, and the provisions of means for making measurements consistent with those standards; determination of physical constants and properties of materials; development of methods for testing materials, mechanisms, and structures, and making such tests as may be necessary, particularly for government agencies; cooperation in the establishment of standard practices for incorporation in codes and specifications; advisory service to government agencies on scientific and technical problems; invention and development of devices to serve special needs of the Government; assistance to industry, business, and consumers in the development and acceptance of commercial standards and simplified trade practice recommendations; administration of programs in cooperation with United States business groups and standards organizations for the development of international standards of practice; and maintenance of a clearinghouse for the collection and dissemination of scientific, technical, and engineering information. The scope of the Bureau's activities is suggested in the following listing of its four Institutes and their organizational units.

Institute for Basic Standards. Applied Mathematics. Electricity. Metrology. Mechanics. Heat. Atomic Physics. Physical Chemistry. Laboratory Astrophysics.* Radiation Physics. Radio Standards Laboratory:** Radio Standards Physics; Radio Standards Engineering. Office of Standard Reference Data.

Institute for Materials Research. Analytical Chemistry. Polymers. Metallurgy. Inorganic Materials. Reactor Radiations. Cryogenics.* Materials Evaluation Laboratory. Office of Standard Reference Materials.

Institute for Applied Technology. Building Research. Information Technology. Performance Test Development. Electronic Instrumentation. Textile and Apparel Technology Center. Technical Analysis. Office of Weights and Measures. Office of Engineering Standards. Office of Invention and Innovation. Office of Technical Resources. Clearinghouse for Federal Scientific and Technical Information.**

Central Radio Propagation Laboratory.* Ionospheric Telecommunications. Tropospheric Telecommunications. Space Environment Forecasting. Aeronomy.

* Located at Boulder, Colorado 80301.

** Located at 5285 Port Royal Road, Springfield, Virginia 22171.

UNITED STATES DEPARTMENT OF COMMERCE • John T. Connor, *Secretary*
NATIONAL BUREAU OF STANDARDS • A. V. Astin, *Director*

Guide To Instrumentation Literature

Julian F. Smith and W. G. Brombacher



National Bureau of Standards Miscellaneous Publication 271
(Supersedes Circular 567)

Issued July 7, 1965

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402
Price \$1.25

FOREWORD

In 1945 the Instruments and Regulations Division, American Society of Mechanical Engineers (ASME), issued a pamphlet, Sources of Information on Instruments. In 1952 Julian F. Smith of the Library of Congress prepared a guide and source list, Instrumentation Literature and its Use, for the Office of Basic Instrumentation, National Bureau of Standards.

Revision of the two publications was undertaken jointly by ASME and NBS, and the result was issued in 1955 as NBS Circular 567, Guide to Instrumentation Literature. Lyman Van der Pyl, for the Bibliography Committee of the Instruments and Regulators Division, ASME, participated in the revision. The Smith report was thoroughly revised, enlarged, and updated, but its list of instrument manufacturers (readily available elsewhere) was dropped.

The present Monograph is a revision of Circular 567. The announced objective of Circular 567 was to assist all persons "interested in utilizing the extensive and scattered literature of instrumentation." With the same objective, this revision has brought its literature coverage into 1964, while dropping older references now aging into obsolescence. The revision is part of a program of instrumentation research and development in the Basic Instrumentation Section under Joshua Stern, chief of the section.

A. V. Astin, Director.

Library of Congress Catalog Card No. 65-60096

CONTENTS

Page

Foreword	ii
1. Introduction	1
1.1 Objective	1
1.2 Scope	2
1.3 Kinds of Literature	2
1.4 Time Coverage	3
1.5 Sources Consulted	3
1.6 Instrumentation in the Literature	4
1.61 Abstract Journals	4
1.62 Periodicals	4
1.63 Technical Reports	4
1.64 Separates	4
1.65 Patents	5
1.66 Dissertations	7
1.67 Buyers' Guides	7
1.68 Literature Guides	7
1.7 Arrangement of Entries	7
1.8 Abbreviations	8
2. Classified Entries	21
2.1 Abstracting and Indexing Journals and Services	21
A100 General Science; Life Sciences	21
A200 Instrumentation	22
A300 Electricity and Electronics	23
A400 Physics	24
A500 Chemistry	24
A600 Engineering	25
A700 Process Industries	26
2.2 Bibliographies	28
B100 Instrumentation	28
B200 Automation and Control	29
B300 Telecommunications	30
B400 General or Not Otherwise Classified (A,B,C,D)	31
2.3 Books, Monographs, Reference Works	33
1000 Reference Books, Handbooks, Data Compilations (A,B,C)	33
1100 Design of Experiments; Technique	37
1200 Instrumentation: General (A,B,C)	38
1230 Instrumentation: Devices (A,B,C,D)	40
1270 Instrumentation: Functions and Effects	43
1300 Automation and Control: General (A,B,C,D)	44
1330 Automation and Control: Devices (A,B,C,D)	47
1370 Process Control (A,B,C,D)	49
1400 Computers: General (A,B,C,D)	50
1430 Computers: Analog and Digital (A,B,C,D)	52
1500 Electronics: General	55
1530 Electronics: Instrumental (A,B,C,D)	57

2.3 Books, Monographs, Reference Works (Cont.)	
1550 Electronics: Semiconductors (A,B,C,D)	60
1560 Electronics: Transistors (A,B,C,D)	62
1570 Electronics: Functions and Effects	64
1600 Electricity and Magnetism: General (A,B,C,D)	65
1630 Electricity and Magnetism: Devices (A,B,C,D)	67
1670 Electricity and Magnetism: Functions and Effects	68
1700 Telecommunications: General (A,B,C,D)	70
1730 Telecommunications: Devices (A,B,C,D)	73
1770 Telecommunications: Frequencies; Effects (A,B,C,D)	75
1800 Aeronautics; aviation	77
1830 Space; Rockets; Missiles (A,B,C,D)	79
1900 Physics; Geophysics	81
2000 Meteorology and Seismology	82
2100 Optics: General (A,B,C,D)	83
2130 Optics: Spectroscopy	85
2170 Optics: Microscopy and Electron Microscopy	87
2200 Photography; Photogrammetry	88
2300 Radiation; Radioactivity; Dosimetry	89
2400 Atomic and Nuclear Energy (A,B,C,D)	92
2500 Pressure and Vacuum (A,B,C)	94
2600 Acoustics and Ultrasonics	96
2700 Chronometry; Horology	97
2800 Heat; Temperature; Cryoscopy (A,B,C,D)	98
2900 Mechanics (A,B,C,D)	100
3000 Fluid Flow (A,B,C,D)	103
3100 Vibration and Shock	106
3200 Chemistry; Analysis; Processes (A,B,C)	106
3300 Metals; Metallography	110
3400 Medical Instrumentation; Biophysics (A,B,C,D)	111
3500 Metrology and Calibration	113
3600 Testing Materials	114
3700 Standards; Specifications	116
2.4 Dissertation Guides	116
2.5 Directories, Buyers' Guides, Exhibit Guides (A,B,C)	117
2.6 Guides to Technical Literature and Information Services	119
G100 General	119
G200 Defined Subject Areas	120
G300 Defined Sources	121
2.7 Indexes of Technical Literature	121
I100 General	121
I200 Defined Subject Areas	122
I300 Defined Sources	123

Contents (Cont.)

Page

2.8 Patents	123
Pa100 Official Gazettes and Abridgments	124
Pa200 Official Searching Aids	125
Pa300 Unofficial Searching Aids	126
Pa400 Translations	127
2.9 Periodicals and Serials	128
P100 Instrumentation: General (A,B,C,D)	128
P130 Instrumentation: Special Topics	130
P170 Instrumentation: Company Journals	130
P200 Computers	131
P250 Automation and Process Control (A,B,C,D)	132
P300 Aerospace Sciences (A,B,C,D)	134
P400 Mathematics and its Applications	136
P450 Mechanics (A,B,C,D)	136
P500 Electricity: General	138
P530 Electricity: Society Journals	139
P570 Electricity: Company Journals	141
P600 Electronics: General (A,B,C,D)	141
P700 Telecommunications: General	143
P730 Telecommunications: Radio	145
P750 Telecommunications: Electronic Aspects	146
P770 Telecommunications: Devices; Frequencies	146
P800 Heat; Temperature; Cryoscopy	147
P830 Light; Optics; Photography (A,B,C,D)	148
P870 Acoustics; Ultrasonics	150
P900 Atomic and Nuclear Energy (A,B,C,D)	151
P1000 Geophysics: General (A,B,C,D)	153
P1050 Geophysics: Special Topics	155
P1100 Physics: General (A,B,C,D)	156
P1150 Physics: Applied (A,B,C,D)	158
P1200 Engineering (A,B,C,D)	159
P1300 Chemistry: Analysis (General)	162
P1330 Chemistry: Analysis (Special Methods)	162
P1370 Chemistry: Industrial	163
P1400 Testing Materials	164
P1500 Metrology and Calibration	165
P1600 General Science	167
2.10 Supplement (late entries)	168

GUIDE TO INSTRUMENTATION LITERATURE

Julian F. Smith¹ and W. G. Brombacher²

Der Theoretiker alles weiss und nichts kann.
Der Praktiker nichts weiss und alles kann.
German engineers' proverb.

Practice is blind without theory.
Theory is lame without practice.
Instrumentation version.

1. INTRODUCTION

NOTE: Abbreviations, chiefly for names of sponsoring or issuing organizations, are interpreted in 1.8.

This compilation is a source list of instrumentation literature, with a subject index and an index of personal and Corporate authors. Because instrumentation outcrops occur all through scientific and technical literature, two effects are noticeable:

- a. Many entries, selected for useful ore content, do not look like pay dirt. Merit ratings might need defending, so none are offered.
- b. Innumerable titles covering some ore content had to be omitted; overloading would add more hindrance than help.

In the conglomerate stratum between obviously rich and patently lean ores, doubtless some nuggets were missed and some fool's gold passed for real. As to thoroughness in the list, the survey of sources consulted (1.5) permits a rough assay.

1.1 OBJECTIVE.

Two concepts underlie this Guide:

- a. Instruments serve to extend or refine human faculties of sensing and control beyond their unaided range of observation, measurement or computation.
- b. Instrumentation comprises the art and science of designing, making, applying and operating instruments.

-
1. Now at Lenoir Rhyne College, Hickory, North Carolina.
 2. Consultant, NBS.

1.1 (Cont.)

The broad objective is to meet general and specific needs for aid in locating information on instrumentation; hence the emphasis on guides (2.4, 2.5, 2.6, 2.7).

1.2 SCOPE.

This Guide is a bibliography of literature which contains, or will aid in finding, instrument information. The aim is to list the principal sources which are directly pertinent, and selected related sources (e.g. in electronics, computers, metrology, etc.).

Literature coverage for patents and for medical instrumentation, intentionally scanty in Circular 567, is expanded here to allow for increasing quantity and pertinence of these areas. Patent literature is discussed in the introduction, as to character, extent and instrumentation significance. This is to encourage use of patents as primary sources of technical information, and inclusion of patent references in bibliographies.

Foreign languages receive less attention than English, since their publications are less readily accessible, and American linguistic skill is in short supply. No language is barred solely for unfamiliarity; foreign sources receive attention here about in proportion to their coverage in the sources consulted (1.5). This accounts for the prominence of Russian.

Major sources of translations are noted, e. g. by listing both titles of translated periodicals (mostly Russian) and books. Foreign language titles are transliterated when necessary, but are not translated (explanatory notes are sometimes added). Japanese and Chinese sources are increasingly prolific in instrumentation through the past decade.

1.3 KINDS OF LITERATURE.

Varieties of instrumentation literature, and some selection criteria for entry here, are:

- a. Books, manuals, reference works, data compilations (generally omitting undergraduate textbooks).
- b. Publications offering abstracts or indexes, when coverage includes instrumentation.
- c. Periodicals, including a few house organs having substantial technical content.

1.3 (Cont.)

- d. Bibliographies and indexes, including some which list technical reports.
- e. Buyers' guides, exhibit guides, directories of manufacturers.
- f. Guides to dissertations, patents, standards, etc., and to branches of science literature (chemistry, physics, engineering, etc.).

These types of literature are excluded:

- a. Separates (patents, dissertations, governmental and institutional bulletins, technical reports, etc.). Some guides, abstracts and indexes covering separates are listed.
- b. Trade literature (catalogs, fliers, instruction manuals and non-technical house organs).
- c. Trivia and ephemera.

1.4 TIME COVERAGE.

Books subject to obsolescence are listed only from about 1950; most entries are less than 10 years old. Some are still in preparation (1964). Some lastingly useful publications are entered regardless of age. Beginning dates of serials (even into previous centuries), and time coverage of bibliographies, are noted when known.

1.5 SOURCES CONSULTED.

Reference sources of these types were used:

- a. Card catalogs and appropriate shelves in LC, NBS Library, USPOL and NLM.
- b. Book reviews and publishers' announcements (taken as found, not systematically searched).
- c. Pertinent subject sections in catalogs (1962-64) of domestic and foreign publishers of technical books.
- d. Accession lists, NBS Library.
- e. Selected sources from those listed in 2.6 and 2.7.

1.6 INSTRUMENTATION IN THE LITERATURE

Each type of instrumentation literature has its own characteristics to guide inquirers. Examples:

1.61 ABSTRACT JOURNALS

- a. Biological Abstracts: Microscopy; medical instrumentation; devices for animal tests; marine biology.
- b. Chemical Abstracts and Chemisches Zentralblatt: Apparatus; process automation and control; photography; instruments for radiation and subatomic phenomena; instrumental analysis.
- c. Physics Abstracts and Electrical Engineering Abstracts (rich in instrumentation): laboratory instruments; electrical and electronic devices.
- d. Engineering Index (subject-classified): numerous subclasses for instrumentation.
- e. Nuclear Science Abstracts: instruments for atomic and subatomic phenomena.

1.62 PERIODICALS. There is no fixed census of scientific and technical periodicals; rates of birth and death are too high. The latest World List of Scientific Periodicals has about 60,000 titles; instrumentation topics may appear in any or all of them. Selections for entry were based on pertinent content (not necessarily in predominance) useful to instrumentation searchers. Discontinued titles are omitted unless they have lasting utility. Collective indexes, covering periods of 5 to 50 years, are noted in periodical entries. Serials (often annual or biennial) are entered as periodicals.

1.63 TECHNICAL REPORTS, too numerous to enter here, are omitted, with only a few exceptions made for special reasons. The bibliographic aids supplied by DDC, OTS, AEC and NASA are in general sufficient for finding reports. Outside of security-classified areas, these aids are publicly available (2.1). They have little foreign coverage; various European agencies serve as guides to foreign reports, e.g. DSIR (Great Britain), CNRS (France), TNO and NIDR (Netherlands). None will publicly disclose reports which are under security wraps.

1.64 SEPARATES. Legions of separates, often in numbered or coded series, are issued by international, national or regional governments and private organizations. Technical societies, trade associations, academic or scientific institutions, and standardizing bodies (ASA, ASTM, ISO, BSI, DNA, etc.) all contribute. Many separates are important monographs. Only a few outstanding titles have been entered; researchers should consult guides and indexes (2.2, 2.4, 2.6, 2.7), or publication lists of issuing organizations.

1.65 PATENTS.

1.651 Extent of Patent Literature. Great Britain (1617-), the U. S. (1789-), France (1791-) and Germany (1877-) all are in the million-patents class:

- a. Great Britain, average about 60 per year, 1617-1852; about a million in series renumbered annually, 1853-1915; over 800,000, 1916-64.
- b. U. S. (present numbering from 1937), passed number 3,100,000 in August, 1963.
- c. France and Germany, numbering passed a million in the 1950's.

There are now two German patent offices (DPA, Munich, and DDR, East Berlin). The DDR (around 40,000 patents up to 1964) distinguishes between Ausschliessungspatente and Wirtschaftspatente, probably imitating the Soviet distinction between "patents" and "certificates" of invention. Several European nations open pending applications to public opposition (DPA calls them Auslegeschriften). Even their rejected applications are sources of technical information.

Of more than a hundred patent offices, most do not issue printed copies (Canada not till 1948, Belgium not till 1950). Hardly more than a score issue patents meriting an instrumentation search. Holland (1912-) copyrights its printed applications and patents. The Swiss Patentamt is trilingual (German, French, Italian); Canadian patents are usually in English, but sometimes in French. The Soviet patent office (1924-) is far more active than was the Czarist patent office (1813-1917).

Among patent gazettes of small nations which merit careful attention for instrumentation are those of Holland, Belgium, Switzerland and Scandinavian nations. Concentration in these nations on utilizing their engineering talent leads to relatively high instrumentation activity. Thus, printed Swedish patents in their Class 42 (precision instruments), 1885-1964, fill about 50 bound volumes (POSIL).

1.652 Searching. Instrument patents are best searched through official subject classifications. Being mainly functional, the U. S. classification enters instruments by purpose served, not by structure. The looseleaf manual, under constant revision, indexes thoroughly its more than 400 classes and its thousands of subclasses.

Instrumentation, being as heterogeneous as the useful arts, is inevitably scattered in all patent classifications. Poor indexing intensifies a searcher's difficulties; he must contribute his due share of patience, skill and care.

The base for the present U. S. classification was adopted in the 1870's. Then new, DPA (1877-) picked up the discarded base, followed in later years by several other European nations (the Soviet Union most recently). Greatly elaborated, classifications on the old base are now much used in Europe.

The British, French and Swiss classifications are individualistic; Canada follows the U. S. rather than the British scheme. Revision is less active in these nations than in the USPO. Britain, Germany and Switzerland index their classifications well, France less thoroughly. Though POSL has a manuscript translation of the French classification, searching French patents by classes is tedious. Their instruments class is poorly defined and includes musical instruments.

Published claims or abridgments of patents are usually not well indexed; as exceptions, BPO and DPA provide excellent subject indexes of abridgments. The U. S. and Canada issue only indexes based on titles, offering searchers little aid and no comfort. Search room practice (POSL) helps by filing cross references when a patent pertains to more than one class. For small patent offices which issue no indexes, output is small and classwise searches are usually brief.

The International Patent Classification, Convention of December 19, 1954, is not a searching aid, but an avowed first step toward European patents under one European patent law. In its first decade its adherents are Common Market and Outer Seven nations. None has yet discarded its own classification to adopt the International system, but member nations print the International class number, along with the class number in their own system, on copies of patents. The full text of the International Patent Classification, in English, French and German) can be had as a separate. Gazettes of member patent offices(e. g. Bulletin officiel) print the full text at intervals.

1.653. Gazettes are weekly in large patent offices. Some carry printed claims or abridgments; others are confined to official notices, leaving the abridgments to a separate publication. France published no abridgments till 1958; its Abreges descriptifs (2.8) was a supplement to Bulletin officiel, 1958-59, but was separated in 1960. The British Abridgments were separated years ago from the Official Journal (2.8).

1.654. Unofficial aids (periodicals, card services, machine-coded records) come mainly from private enterprise. The sputnik-sparked interest in translating Russian extends even to rival translations from the Soviet Byulletin Izobretenii (2.8). Some first-claim translations from patents of Scandinavian countries, DDR, Poland and USSR are in the POSL files.

Leading sources of published patent abstracts include Chemical Abstract and Chemisches Zentralblatt (excellent coverage in chemical instrumentation), Solid State Abstracts (semiconductors); and Nuclear Science Abstracts (nucleonics). Lacking any comprehensive source for abstracts of instrument patent researchers must rely on scattered sources.

1.655 Mechanized searching in the USPO now covers all steroid patents, coded so that examiners now search only by machine. Coding is in progress (1964) for electronics and some areas of inorganic chemistry. The ultimate but distant goal is to code the entire subject classification, passing gradually from manual searching to total mechanization.

1.656 Patentability. Allowance by examiners, and grants by the Patent Office, do not guarantee validity of patents. A court may declare a litigated patent invalid for any of various reasons, such as prior art unknown to the examiner. Laws or principles of nature, and discoveries in pure theory, are not patentable. True, a half century ago one Scofield succeeded in patenting two pet theological doctrines under the guise of educational toys; but the rule remains. To be patentable an invention must be novel (not published up to a year before the application was filed), not contrary to public morals, and useful.

1.66 DISSERTATIONS. Academic concentration on pure theory in doctoral dissertations is archaic; theory moved over long ago to give practice a seat. Interest in and attention to instruments increased. Many theses reach the periodical press only in part, many not at all; abstract journals commonly ignore them. Hence published subject indexes can give them only scanty coverage. Like patents and other separates, dissertations often contain significant new information about instrumentation. They are traced best through the aids listed in 2.4.

1.67 BUYERS' GUIDES. Industries served by trade journals which depend much on advertising income are well supplied with buyers' guides, exposition guides, etc. Conspicuous among them, for instrument interests, are chemical processing, electronics, electricity, machinery, and instruments themselves. Only major examples are cited in 2.5.

1.68 LITERATURE GUIDES. Chemistry has had its literature guides since before World War I; physics, mathematics and engineering followed suit between the world wars. Nontechnical subject areas had much older guides, and new ones still appear. In fast-moving arts and sciences the guides are plagued by early obsolescence, a syndrome to which this one has no immunity. General instructions in literature searching (see references cited in 2.6) are good also for instrumentation searches. Only major aids are cited.

1.7 ARRANGEMENT OF ENTRIES.

Sources of instruments information are entered by types, subdivided by subjects in small searchable groups (mostly not over about 30 entries). Some voluminous subjects are broken down geographically: A = United States, B = other English-language sources, C = Western Europe, D = all other origins.

Sequence within subdivisions is random, so that late entries change only spacing, not arrangement. The classification code appears in the Table of Contents. Entries too late to classify are in 2.10.

1.8 ABBREVIATIONS.

Names of publishers and of sponsoring organizations (largely scientific or technical societies and government agencies) are abbreviated in this Guide, and in the index entries for corporate authors. The abbreviations, in alphabetical order, are interpreted here. Location is usually indicated, but is commonly uncertain and often omitted for international unions of societies. Berlin means West Berlin; East Berlin or Berlin (DDR) means Communist-controlled Berlin.

- AAAS: American Association for the Advancement of Science, Washington
AAS: American Astronautical Society, Baltimore
ABS: American Bibliographic Service, Darien, Connecticut
ACeS: American Ceramic Society, Columbus
ACGIH: American Conference of Governmental Industrial Hygienists, Cincinnati
Achema: See Dechema
ACM: Association for Computing Machinery, New York
ACS: American Chemical Society, Washington
AcSA: Acoustical Society of America, New York
Addi-
son: Addison-Wesley Publishing Co., Inc., Reading, Mass.
AEC: Atomic Energy Commission, Washington
AED: Zentralstelle Atomkernenergie-Dokumentation (Gmelin Institut), Frankfurt a/m
AEG: Allgemeine Elektrizitäts-Gesellschaft, Berlin
AEI: Associazione elettrotecnica italiana, Milan
AEI
Ltd: Associated Electrical Industries (Manchester) Ltd.
AERE: Atomic Energy Research Establishment, Harwell, England
AES: Audio Engineering Society, New York
AES
Japan: Atomic Energy Society of Japan, Tokyo
AF: U. S. Air Force
AFN: Association Francaise de Normalisation, Paris
AFOSR: Air Force Office of Scientific Research, Washington
AGARD: Advisory Group for Aeronautical Research and Development, Washington
AGET: Advisory Group on Electron Tubes, DOD, Washington
AGI: American Geological Institute, Washington
AGU: American Geophysical Union, Washington
AI: American Instrument Co., Silver Spring, Maryland
AIAA: American Institute of Aeronautics and Astronautics, New York (merger of Institute of Aerospace Sciences and American Rocket Society)
AIChE: American Institute of Chemical Engineers, Philadelphia
AID: Aerospace Technology Division, Library of Congress, Washington
AIEE: American Institute of Electrical Engineers, New York (merged, 1962, with IRE as IEEE).

- AIMME: American Institute of Mining and Metallurgical Engineers, Dallas. (see also AIMMPE).
- AIMMPE: American Institute of Mining, Metallurgical and Petroleum Engineers, Philadelphia. (Petroleum was added to the name AIMME in 1956).
- AIP: American Institute of Physics, New York
- Air Univ: Air University Library, Maxwell Air Force Base, Alabama
- Akademie: Deutsche Akademie der Wissenschaften (Berlin) and its Akademie-Verlag
- Akademis- che: Akademische Verlagsgesellschaft Geest und Portig, Leipzig, (DDR).
- ALA: American Library Association, Chicago
- Allyn: Allyn & Bacon, Inc., Englewood Cliffs, N. J.
- AMA: American Medical Association, Chicago
- American Aviation: American Aviation Publications, Inc., Washington
- AMAS: American Mathematical Society, Providence
- AMeS: American Meteorological Society, Washington
- AMIs: American Microscopical Society, Ann Arbor
- AN: Akademiya Nauk SSSR, Moscow (Academy of Sciences, USSR).
- ANIDEL: Associazione Nazionale Imprese Produttrici e Distributrici di Energia Elettrica, Rome
- ANL: Accademia Nazionale dei Lincei, Rome
- APL: Applied Physics Laboratory, Silver Spring, Md.
- Arnold: Edward Arnold & Co., Ltd., London W.l.
- ARS: American Rocket Society, New York (also see AIAA)
- ASA: American Standards Association, New York
- ASE: Association Suisse des Electriciens, Zurich
- ASEA: Allmänna Svenska Elektriska Aktiebolaget, Västeras
- ASHAE: American Society of Heating and Airconditioning Engineers, New York
- ASM: American Society for Metals, Novelty, Ohio
- ASME: American Society of Mechanical Engineers, New York
- ASP: American Society of Photogrammetry, Washington
- ASQC: American Society for Quality Control, Milwaukee
- ASRE: American Society of Refrigerating Engineers, New York
- ASTIA: Armed Services Technical Information Agency, Arlington. (name changed 1963, to Defense Documentation Center for Science and Technology, DDC).
- ASTM: American Society for Testing and Materials, Philadelphia (and added to the name, 1961).
- AUDD: Association pour l'Utilisation et le Diffusion de la Documentation, Lyons
- AVS: American Vacuum Society, New York
- Barth: Johann Ambrosius Barth Verlag, Leipzig
- BCIRA: British Cast Iron Research Association, Birmingham

BCS: British Computer Society, London
BCeS: British Ceramic Society, London
BEAMA: British Electrical and Allied Manufacturers' Association,
London

Beck-
man: Beckman Instruments, Inc., Richmond, California
Bell: G. G. Bell and Sons, Ltd., London
Bell
Labs: Bell Telephone Laboratories, New York

Benja-
min: W. A. Benjamin, Inc., New York
Benn: Ernest Benn, Ltd., London
Beuth: Beuth-Vertrieb G.m.b.H., Cologne
BGPC: Bunsengesellschaft für physikalische chemie, East Berlin
BHI: British Horological Institute, London
BHRA: British Hydromechanics Research Association, Harlow
BIRE: British Institution of Radio Engineers, London
BIS: British Interplanetary Society, London

Black-
well: Blackwell Scientific Publications, Oxford, England
BLS: U. S. Bureau of Labor Statistics, Washington
BMI: Battelle Memorial Institute, Columbus
BNES: British Nuclear Energy Society, London
Bowker: R. R. Bowker Co., New York
Bowman: Bowman and Littlefield, Inc., New York
BPI: Brooklyn Polytechnic Institute
BPO: British Patent Office, London
BRL: Ballistic Research Laboratories, Aberdeen Proving Ground
BSI: British Standards Institution, London
BSIRA: British Scientific Instruments Research Assn., London
BSR: British Society of Rheology, Pontypool
BuAer: U. S. Navy Bureau of Aeronautics, Washington
(merged into Bureau of Naval Weapons)
BuOrd: U. S. Navy Bureau of Ordnance, Washington
(merged into the Bureau of Naval Weapons)
BuShips: U. S. Navy Bureau of Ships, Washington
BuWeaps: U. S. Bureau of Naval Weapons, Washington
(merger of BuOrd and BuAer).

Butter-
worth: Butterworth Publications, Ltd., London and Washington

Califor-
nia: University of California Press, Berkeley

Cam-
bridge: Cambridge University Press, Cambridge, England
CAV: Ceskoslovenska Akademie Ved (Czechoslovak Academy of
Science) Prague

CGS: U. S. Coast and Geodetic Survey, Washington

Chap-
man: Chapman and Hall, Ltd., London

Chemi-
cal: Chemical Rubber Publishing Co., Cleveland

Chi-
cago: University of Chicago Press
Chilton: Chilton Co. Book Division, Philadelphia
CIIPN: Centro de Investigacion del Instituto Politecnico Nacional,
al, Mexico City
CIRP: College International Recherche Production (International
Institution for Production Engineering Research)
CISE: Centro Informazione Studi Esperienze, Milan
Claren-
don: Clarendon Press, New York (for Oxford University Press)
Cleaver-
Hume: Cleaver-Hume Index Offices, London
CLS: Central Library of Spectroscopy, Ellicott City, Md.
CMA: Canadian Manufacturers' Association, Toronto
CNET: Centre Nationale d'Etudes des Telecommunications, Issy-
les-Molineaux
CNRS: Centre Nationale de Recherche Scientifique, Paris
Colum-
bia: Columbia University (including Columbia University Press)
New York
Con-
stable: Constable & Co., Ltd., London
Consul-
tants: Consultants Bureau, New York (see also Plenum)
COSPAR: Committee on Space Research (ICSU), Paris
Crosby: Crosby Lockwood and Son, Ltd., London
CSIRO: Commonwealth Scientific and Industrial Research Organ-
ization, East Melbourne, Australia
DATA: Derivation and Tabulation Associates, Inc., Orange, N.J.
DAW: Deutsche Akademie der Wissenschaften (West Germany)
DBP: Deutsche Bundespost
DDC: Defense Documentation Center for Science and Technology,
Arlington
DDR: Deutsche Demokratische Republik (East Germany), including
its Patent Office in East Berlin.
Dechema: Deutsche Gesellschaft für chemisches Apparatewesen,
Frankfurt a/M. (Publisher of Achema Jahrbuch).
de Gruy-
ter: W. de Gruyter Verlag, Berlin
Derwent: Derwent Information Service, London
DIN: Deutsche Industriennormen, issued by Deutsche Normen-
ausschuss (DNA), Berlin. (German Industrial Standards)
DMA: Deutsche Messe- und Ausstellungs Aktiengesellschaft,
Hannover
DMPA: Deutsche Materialprüfungsanstalten, Berlin
DNA: Deutsche Normenausschuss, Berlin. See Also DIN.
DO: Dominion Observatory, Ottawa
DOD: Department of Defense, Washington
DOFL: Diamond Ordnance Fuze Laboratories, Washington (Army Mat-
erial Command). (Name changed 1963, to Harry Diamond
Laboratories).

Dover: Dover Publications, Inc., New York
DPA: Deutsches Patentamt, Munich
DPG: Deutsche physikalische Gesellschaft, Berlin
DRG: Deutsche rheologische Gesellschaft, Berlin
DSIR: Department of Scientific and Industrial Research, London
DT: Dokumentation der Technik, Munich
DuMont: Allen B. DuMont Laboratories, Inc., Clifton, N. J.
Dunod: Dunod Editeur, Paris
DVL: Deutsche Versuchsanstalt für Luftfahrt, Braunschweig
DVM: Deutscher Verband für Materialprüfung, Berlin
EEG: Electroencephalograph(y)
EIA: Electronic Industries Association, New York
EL: Electrotechnical Laboratory, Agency of Industrial
Science and Technology, Tokyo
Else-
vier: Elsevier Publishing Co., New York and Amsterdam
Engel-
hard: Instruments and Systems Section, Engelhard Industries,
Inc., Newark, N.J.
EOQC: European Organization for Quality Control, Rotterdam
ES: Electrochemical Society, New York
ES
(Japan) Electrochemical Society of Japan, Tokyo
ESL: Engineering Societies Library, New York
Ey-
rolles:Editions Eyrolles, Paris

Felten: Felten und Guilleaume Carlswerk Aktiengesellschaft,
Cologne
FID: Federation International de Documentation, The Hague
Fromme: Verlag Georg Fromme & Co., Vienna

GAFC: General Aniline and Film Corp., Binghampton, N. Y.
GAMS: Groupement pour l'Avancement des Methodes Spectrographi-
ques, Paris
Gau-
thier: Gauthier-Villars, Editeur, Paris
GDC: Gesellschaft deutscher Chemiker, Frankfurt
GE: General Electric Co., Schenectady
GEC: General Electric Co., Ltd., London
Girar-
det: W. Girardet Verlag, Essen
Gmelin: Gmelin-Institut für anorganische Chemie und Grenzgebiete,
Max Planck Gesellschaft zur Förderung der Wissenschaften,
Frankfurt a/M
Gordon: Gordon and Breach, Science Publishers, New York
GPO: Government Printing Office, Washington
Griffin: Chas. Griffin & Co., Ltd., London
Gulf: Gulf Publishing Co., Houston
Hafner: Hafner Publishing Co., New York

Hansea-tische: Hanseatische Verlagsanstalt, Hamburg
Harper: Harper and Row, Publishers, New York
Harvard: Harvard University Press, Cambridge
Hayden: Hayden Book Co., New York
HDL: Harry Diamond Laboratories, Army Material Command,
Washington (Until 1963 the name was Diamond Ordnance Fuze Laboratories, DOFL).

Heine-mann: Wm. Heinemann, Ltd., London
HEW: Health, Education and Welfare Dept., Washington
Heymann: Carl Heymanns Verlag K.-G., Munich
Heywood: Heywood & Co., Ltd., London
Hilger: Hilger and Watts, and Adam Hilger, Ltd., London
Hirzel: S. Hirzel Verlag, Zurich and Stuttgart
Hoepli: Edizione Hoepli, Milan
Holt: Holt, Rinehart & Winston, Inc., New York
Horizon: Horizon House-Microwave, Inc., Brookline, Mass.
Hutchin-son: Hutchinson & Co. (Publishers) Ltd., London W.1

IAEA: International Atomic Energy Agency
IAF: International Astronautical Federation, Vienna
IAS: Institute of the Aerospace Sciences, New York
(see also AIAA)
IBM: International Business Machines Corp., New York
ICC: International Computation Center, Rome
ICF: Institut de Ceramique Francaise, Paris
ICI: International Commission (formerly Congress of)
Illumination
ICPUAE: International Congress on Peaceful Uses of Atomic
Energy
ICSU: International Council of Scientific Unions
ICVT: International Congress on Vacuum Techniques
IE: Institution of Engineers (Australia) Sydney
IECE: Institute of Electrical Communication Engineers of
Japan, Tokyo
IEEE: Institution of Electrical Engineers, London
IEEE: Institute of Electrical and Electronics Engineers,
New York. (merger, 1962, of AIEE and IRE)
IEE
Japan: Institute of Electrical Engineers of Japan, Tokyo
IES: Illuminating Engineering Society, London
IF: Institute of Fuel, London
IFAC: International Federation of Automatic Control, Brussels
IFIP: International Federation for Information Processing
IGT: Institute of Gas Technology, Chicago
II: Information for Industry, Washington
IS: Indian Institute of Science, Bangalore
Illinois: University of Illinois Press, Urbana

IM: Institute of Metals, London
IME: Institution of Mechanical Engineers, London
IMEKO: Internationale Konferenz für Messtechnik und Gerätebau
Indiana: Indiana University Press, Bloomington
Indus-
trial: Industrial Press, New York
INSBK: Institute of Nuclear Sciences Boris Kidrich, Belgrade
Instru-
ments: Instruments Publishing Co., Pittsburgh
Inter-
kama: Internationaler Kongress mit Ausstellung für Messtechnik
und Automatik, Düsseldorf
Inter-
pas: International Patent Service Naamlooze Vennootschap,
Den Bosch, Netherlands
Inter-
science: Interscience Publishers, New York (Div. of John Wiley
and Sons)
IP: Institute of Physics, London
IPC: International Patent Classification
IPI: International Physical Index, Inc., New York
IRAM: Instituto Argentino de Racionalizacion de Materiales,
Buenos Aires
IRE: Institute of Radio Engineers, New York
(merged 1962, with AIEE as IEEE)
IRI: Industrial Research Institute, Osaka, Japan
IRE: Industrial Research Service, Dover, New Hampshire
ISA: Instrument Society of America, Pittsburgh
ISCI: Institute for Scientific Information, Philadelphia
ISI: Indian Standards Institution, Delhi
ISO: International Standards Organization
ISTI: Institute for Scientific and Technical Information of
China, Peking
ITC: International Training Center for Aerial Survey, Delft
ITT: Institute of Textile Technology, Charlottesville, Va.
I Tel
Tel: International Telephone & Telegraph Corp., New York
ITU: International Telecommunication Union, Geneva
IUC: International Union of Crystallography
IUPAC: International Union of Pure & Applied Chemistry, Paris
IVA: Ingeniörs Vetenskapsakademien, Stockholm
IWB
RATEM: Institut für wissenschaftliche Berichterstattung RATEM,
Vienna. RATEM = Radio, Iontechnik, Elektromedizin
IWMA: Institute of Weights and Measures Administration,
Manchester

JCL: John Crerar Library, Chicago
JPL: Jet Propulsion Laboratory, Pasadena
JPRS: Joint Publications Research Service, Washington

JSASS: Japan Society for Aeronautical and Space Sciences, Tokyo
JSME: Japan Society of Mechanical Engineers, Tokyo
JSTM: Japan Society for Testing Materials, Tokyo

Knapp: Knapp Verlag, Düsseldorf
Kodak: (Eastman) Kodak Research Laboratories, Rochester
Krupp: Friedrich Krupp Aktiengesellschaft, Essen
Kyushu: Kyushu University, Fukuoka

LA: Library Association, London
LC: Library of Congress, Washington
Leemann: Gebrüder Leemann and Co., Zurich
LKB: LKB-Produkter Aktiebolaget, Stockholm
Long-
mans: Longmans, Green & Co., Ltd., London and New York

Macdon-
ald: Macdonald & Co. (Publishers) Ltd., London
MBLE: Societe anonyme MBLE Manufacture Belge de Lampes et de
Materiel Electronique, Brussels

Macmil-
lan: Macmillan Co., New York and London
Marconi: Marconi Wireless Telegraph Co., Ltd., Chelmsford

Mary-
land: University of Maryland, College Park
MB: Munitions Board, Washington

McGraw-
Hill: McGraw-Hill Book Co., New York
Merrill: Chas. E. Merrill Books, Inc., Columbus

Meth-
uen: Methuen & Co., Ltd., London
M-H: Minneapolis-Honeywell Regulator Co., Minneapolis

Micro-
films: University Microfilms, Ann Arbor
MIRA: Motor Industry Research Association Lindley (England)
MIT: Massachusetts Institute of Technology, Cambridge (includ-
ing MIT Press)

Moraine: Editions la Moraine, Geneva
Mouton: Mouton & Co., The Hague
MPI: Max Planck Institut für Stromungsforschung, Göttingen
MRI: Microwave Research Institute, Brooklyn

NACA: National Advisory Committee for Aeronautics (now NASA)
Washington
NACE: National Association of Corrosion Engineers, Houston
NAS-NRC: National Academy of Sciences and National Research
Council, Washington
NASA: National Aerospace Sciences Administration, Washington
see also NACA
Nauk: Akademiya Nauk SSSR (Academy of Sciences USSR), Moscow

- Navorde: Navy Bureau of Ordnance, Washington (merged into
 Bureau of Naval Weapons)
 NCO: Nederlandse Centrale Organisatie, Delft (**see also TNO**)
 NEF: Norsk Elektroteknisk Forening, Oslo
 NFS: Norsk Fysisk Selskap, Trondheim
 NFSAIS: National Federation of Science Abstracting and Indexing
 Services, Washington
 NIDA: Norwegian Industries Development Association, Oslo
 NIDR: Nederlandsch Instituut voor Documentatie en Registratie,
 The Hague
 NIH: National Institutes of Health, Bethesda
 NLL: National Lending Library for Science and Technology,
 Boston Spa, England
 NLM: National Library of Medicine, Bethesda
 MNES: National Nuclear Energy Series
 Northwest-
 ern: Northwestern University Press, Evanston
 NPL: National Physical Laboratory, London
 NRC: see NAS-NRC
 NRLM: National Research Laboratory of Metrology, Tokyo
 NSF: National Science Foundation, Washington
 NYSEM: New York Society of Electron Microscopists

 OAR: Office of Aerospace Research, Washington
 OECD: Organization for Economic Cooperation and Development, Paris
 Ohio: Ohio State University, Columbus
 Olden-
 bourg: R. Oldenbourg Verlag, Munich
 ONERA: Office National d'Etudes et de Recherches Aérospatiales, Paris
 ONR: Office of Naval Research, Washington
 Oost-
 hoek: Naamlooze Vennootschap A. Oosthoek Uitgevers Maatschappij, Utrecht
 OSA: Optical Society of America, New York
 OTS: Office of Technical Services, Department of Commerce,
 Washington
 Oxford: Oxford University Press and Clarendon Press, New York

 PAL: Pacific Aerospace Library, IAS, Los Angeles
 PDC: Prevention of Deterioration Center, NRC, Washington
 Penn: University of Pennsylvania, Philadelphia
 Penton: Penton Publishing Co., Cleveland
 Perga-
 mon: Pergamon Press, New York
 Philips: Philips Gloeilampenfabrieken, Eindhoven

 Pitman: Sir Isaac Pitman and Sons, Ltd., London, and Pitman
 Publishing Corp., New York

PL: Philosophical Library, New York
Plenum: Plenum Press, Inc., New York (subsidiary of
 Consultants' Bureau)
POSL: Patent Office Scientific Library, Washington
Prentice-
 Hall: Prentice-Hall, Inc., Englewood Cliffs, New Jersey
Preston: Preston Technical Abstracts Co., Evanston, Illinois
Prince-
 ton: Princeton University Press, Princeton
PS: Physical Society, London
PSAC: President's Science Advisory Committee, Washington
PS
(Japan): Physical Society of Japan
PTBA: Physikalisch-technische Bundesanstalt (formerly
 Reichsanstalt), Braunschweig
PTT: Schweizerische Post-, Telephon- und Telegraphen-
 Betrieben, Bern
Purdue: Purdue University, Lafayette, Indiana

RAeS: Royal Aeronautical Society, London
Rand: Rand Corporation, Santa Monica, Calif.
Random: Random House, Inc., New York
RAS: Royal Astronomical Society, London
RATEM: see IWB RATEM
RCA: Radio Corporation of America, Harrison, N. J.
Rein-
 hold: Reinhold Publishing Corp., New York

RIAM: Research Institute for Applied Mechanics (Japan)
 Kyushu University
Rider: John F. Rider, Publisher, Inc., New York City
RILEM: Reunion International des Laboratoires d'Essais et de
 Recherches sur les Materiaux et les Constructions,
 Paris. (Affiliate of International Association of
 Testing and Research Laboratories for Materials and
 Structures).
RIMR: Rockefeller Institute for Medical Research, New York
RMS: Royal Meteorological Society, London
RMis: Royal Microscopical Society, London
Ronald: Ronald Press Co., New York
RPS: Royal Photographic Society, London
RRE: Radar Research Establishment, Malvern, England
RSL: Royal Society of London
RTI: Research Triangle Institute, Durham, N. C.

SAA: Standards Association of Australia, Sydney
SAC: Society for Analytical Chemistry, London
SAE: Society of Automotive Engineers, New York
Sams: Howard W. Sams & Co., Indianapolis
SAS: Society for Applied Spectroscopy, Bound Brook, N. J.

SEE: Society of Electrical Engineers, Bangalore, India
SEM: Society of Electron Microscopy (Japan), Chiba City
SESA: Society for Experimental Stress Analysis, Westport, Conn.
SFM: Societe Francaise des Mecaniciens, Paris
SFP: Societe Francaise de Physique, Paris
SI: Shirley Institute, Manchester, England
SIAM: Society for Industrial and Applied Mathematics,
Philadelphia
SICF: Societe des Ingenieurs Civils de France, Paris
Siemens Siemens & Halske Aktiengesellschaft, Berlin-Siemensstadt
SIF: Societa italiana d i fisica, Bologna
SIT: Society of Instrument Technology, London
SITA: Society for Instrument Technology, Australia, Melbourne
SITJapan: Society of Instrument Technology, Japan, Tokyo
SLA: Special Libraries Association, New York
SMF: Sveriges Mekanförbund, Stockholm
SMPTE: Society of Nation Picture and Television Engineers,
New York
Smith-
sonian: Smithsonian Institution, Washington
SNT: Society for Nondestructive Testing, Evanston, Ill.
Soprodoc: Societe de Productions Documentaires, Paris
SOTELEC: Societe mixte pour le Developpement de la Technique
des Telecommunications sur Cables, Paris
Speller: Robert Speller and Sons, Inc., New York
Sperry: Sperry-Rand Corp., New York
SPIE: Society of Photographic Instrumentation Engineers,
New York
SPLE: Society of Plastics Engineers, Greenwich, Conn.
Sprin-
ger: J. Springer Verlag, Berlin, and Lange-Springer Wissen-
schaftliche Buchhandlung, Berlin
SPSE: Society of Photographic Scientists and Engineers,
Washington
SRI: Southeastern Research Institute, Atlanta
SSA: Seismological Society of America, Berkeley
SSC: Societe Suisse de Chronometrie, Lausanne
SSJ: Seismological Society of Japan, Tokyo
SSSR: Soyuz Sotsialisticheskikh Sovetskikh Respublik (=USSR)
Stan-
ford: Stanford University Press, Stanford, Calif.
STAR: Scientific and Technical Aerospace Reports (NASA),
Washington
Stein-
kopff: Steinkopff Verlag, Dresden and Frankfurt and
Dr. Dietrich Steinkopff, Darmstadt
SVMT: Schweizer Verband für die Materialprüfung der Technik,
Solothurn

Taylor: Taylor Instrument Cos., Rochester, N.Y.
Taylor-F: Taylor and Francis, Ltd., London

TCU: Texas Christian University Press, Fort Worth
Technology

Press: same as MIT Press

TELE: Kungliga Telestryrelsen, Stockholm

Temple: Temple Press Ltd., London

Teubner: B. G. Teubner Verlag, Stuttgart

Thieme: Georg Thieme Verlag, Stuttgart

Thomas: Chas. C. Thomas, Publishers, Springfield, Ill.

Thomas Re-

gister: Thomas Publishing Co., Chicago

TI: Technical Information Co., Ltd., London

TNO: Toegepast Natuurwetenschappelijk, Onderzoek. The Hague
(see also NIDR).

Toronto: University of Toronto Press, Toronto

TP: Technical Press, Ltd., London

TRI: Textile Research Institute, Princeton, N.J.

Tudor: Tudor Publishing Co., New York (sales for Chemical
Publishing Co.)

UCLA: University of California at Los Angeles

UDC: Universal Decimal Classification

UKAEA: United Kingdom Atomic Energy Authority, Risley

UKW: Ultrakurzwellen = microwaves

UL: Underwriters' Laboratories, Chicago

UN: United Nations, Geneva and New York

UNESCO: United Nations Educational, Scientific and Cultural
Organization, Paris

Ungar: Frederik Ungar Publishing Co., New York

United: United Trade Press, Ltd. and United Science Press,
Ltd., London

United Cat-

alog: United Catalog Publishers, Inc., Hempstead, N. Y.

Unwin: Geo. Allen & Unwin, Ltd., London

USDA: U. S. Department of Agriculture, Washington

USGS: U. S. Geological Survey, Washington

USNI: U. S. Naval Institute, Annapolis

USPO: United States Patent Office, Washington

USSR: Union of Socialist Soviet Republics. (= SSSR)

Van Nos-

trand: D. Van Nostrand Co., Princeton, N. J.

VDC: Verein deutscher Chemiker, Berlin

VDE: Verein deutscher Elektrotechniker, Berlin

VDI: Verein deutscher Ingenieure, VDI Verlag, Berlin

VDMA: Verein deutscher Maschinenbau-Anstalten, Frankfurt a/M

VDPG: Verband deutscher physikalischen Gesellschaften,
Braunschweig

VEB: VEB Fachbuchverlag, Leipzig

Verlag

Chemie: Verlag Chemie, Weinheim

Verlag
Technik: VEB Verlag Technik, East Berlin
Vieweg: Friedr. Vieweg und Sohn, Braunschweig
VINITI: Vsesoyuznyi institut nauchnoi i tekhnicheskoi informatsii, Moscow
VNIIM: Vsesoyuznyi nauchno-issledovatel'skogo instituta metrologii, Leningrad

WADC Wright Air Development Center;
WADD: Wright Air Development Division, Dayton
WBAN: Weather Bureau-Air Force-Navy (in joint publications)
Wiley: John Wiley and Sons, Inc., New York
Williams: Williams & Wilkins, Baltimore (Waverly Press)
Wilson: H. W. Wilson Co., New York
Winter: C. F. Winter Verlag, Füssen
Wisconsin: University of Wisconsin, Madison

Year
Book: Year Book Medical Publishers, Chicago

Zanichelli: Nicola Zanichelli Editore, Bologna
Zeiss: VEB Carl Zeiss, Jena (DDR)

II. BIBLIOGRAPHY

2.1 ABSTRACTING AND INDEXING SERVICES

Many abstract journals use a subject-classified arrangement of entries to facilitate scanning and searching, but references pertinent to instrumentation may be expected to appear anywhere.

2.1: A100 General Science: Life Sciences

1. Science Abstracts of China. ISTI. Bimonthly, 1958-59; 1963--. Over 3000 abstracts per year, in English, from Communist Chinese literature. Sections: Life Sciences; Chemistry; Earth Sciences; Mathematical and Physical Sciences, Technical Sciences
- 2.. Index Medicus. NLM. Monthly, 1960--. Original title changed to Current List of Medical Literature (1941-59) resumed 1960; annual cumulation, issued by AMA, replaces Quarterly Cumulative Index Medicus. About 145,000 entries per year.
3. Japan Science Review. Tokyo. Mechanical and Electrical Engineering. Bimonthly, 1955--. Biological Sciences Annual 1951--. Medical Sciences, Quarterly, 1954--.
4. Bulletin signaletique. CNRS. Monthly, 1940--. (Title was Bulletin analytique, 1940-55). From 1961, in 22 separate subject sections, several rich in instrumentation. In subject scope and number of abstracts about 225,000 per year, second only to Referativnyi Zhurnal (USSR).
5. Technical Abstract Bulletin: TAB. DDC. Semimonthly, 1951--; about 28,000 abstracts of technical reports per year. (Successor to Technical Information Pilot, TIP, 1948-51). See next entry.
6. U. S. Government Research Reports. OTS. Semimonthly, 1946--; about 40,000 entries per year. Merged with unclassified TAB, 1961.
7. Zentralblatt für Mathematik und ihre Grenzgebiete. Springer. Irregular, 1913--. About 800 abstracts per year. (Mechanik section was separate, 1933-44) as Zentralblatt für Mechanik).
8. Referativnyi Zhurnal. VINITI for Nauk. Quarterly to semimonthly; more than 50 subject sections (1963), up from 5 in 1953; over 600,000 abstracts per year. Sections for Automation; Electronics; Optical Instruments; Metrology; Instrumentation; Aerospace Sciences; Mechanics, etc. Medicine is covered independently by the Academy of Medical Sciences.

2.1 A100 (Cont.)

9. Science Abstracts. Monthly, 1898--. IEE. Sections: A. Physics Abstracts, about 15,000 abstracts per year. B. Electrical Engineering Abstracts, about 7000 abstracts per year.
10. Mathematical Reviews.. AMaS. 11 issues yearly, 1940--; about 12,000 abstracts per year.
11. Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. OTS. Monthly, 1961--, in 6 series: I. Physics. II. Chemistry. III. Metallurgy. IV. Engineering. V. Communications. VI. General Science and Life Sciences. About 18,000 abstracts per year.
12. Current Technical Papers. Bell Labs. Semimonthly, 1962--. Supersedes Index to Current Technical Literature. A. Journals (1923-61). About 25,000 entries per year.
13. Biological Abstracts. Semimonthly, 1927--. Over 100,000 abstracts per year. Biological Abstracts Subject in Context (BASIC) index in each issue; subject index cumulated quarterly. Instrumentation mainly in microscopy, cerebral devices and microbiological apparatus.

2.1: A200 Instrumentation. These abstract journals are the most concentrated sources of past and current instruments information.

1. Dechema Literatur-Schnelldienst. Dechema. Monthly, 1953--. Apparatus and equipment.
2. Gas Chromatography Abstracting Service. Preston. Weekly, on cards, 1959--; around 1500 abstracts per year.
3. Automation Express. IPI; 10 issues per year, 1958--. Abstracts and translations from Soviet literature.
4. Instrumentation Abstracts. Preston. Weekly, 1960--. About 2000 abstracts per year on cards; patents included.
5. Strain Gage Readings. Phoenix, Arizona. Bimonthly, 1958--; about 700 abstracts per year.
6. Applied Mechanics Reviews: Critical Review of the World Literature in Applied Mechanics. ASME. Monthly, 1948--. About 7000 abstracts per year.
7. Gas Chromatography Abstracts. Butterworth. Annual, 1958--.
8. Advances in Biological and Medical Physics. Academic Press. Annual or biennial, 1948--.
- 8a. Laser Abstracts. Plenum Press, Annual, 1964--.

2.1: A200 (Cont.)

9. Instrument Abstracts. BSIRA. Monthly, 1946-- (formerly Bulletin of the BSIRA).

2.1: A300 Electricity and Electronics

1. Semiconductor Abstracts. BMI. Annual, 1955--; about 2500 abstracts per year.
2. Data Processing Digest. Monthly, 1955--; about 300 abstracts per year.
3. Bibliografia Elettrotecnica: Rassegna mensile della stampa tecnica italiana e straniera. ANIDEL. Combines former separate issues for Italian and other literature. Monthly, 1947--. Around 15,000 entries per year.
4. Computer Abstracts and Bibliography. TI. About 3000 entries per year.
5. Abstracts and References. IRE. Monthly, 1946--. Section in IRE Proceedings, supplied by Electronic Technology (London). About 4000 abstracts per year. Discontinued after January 1963.
6. Technical News Bulletin. AEI Ltd. Weekly, 1926--. About 3000 abstracts (electricity, electronics) per year.
7. Computing Reviews. ACM. Bimonthly, 1961--. About 1500 abstracts per year.
8. Digest of Literature on Dielectrics. NAS-NRC. Annual, 1936--.
9. Bibliography and Abstracts on Electrical Contacts. ASTM. Annual, 1943--; around 300 abstracts per year.
10. Elektronentechnische Berichte: Forschungsberichte und Referatenkartei für das Gebiet der Hochfrequenztechnik, ihre Grenzgebiete und Anwendungen. IWB. RATEM. Irregular, 1947--. Reviews about 1500 periodicals.
11. Reliability Abstracts and Technical Reviews. RTI and NASA. Annual, 1961--.
12. Computer Abstracts on Cards. Cambridge (Mass.) Communications Corp. About 5000 abstracts per year.
13. Abstracts of Computer Literature. Burroughs Corp., Pasadena. Bi-monthly, 1957--; about 1500 abstracts per year.
14. Electronics and Communications Abstracts. Brentwood, England. Bi-monthly, 1961--; around 5000 abstracts per year.

2.1: A300 (Cont.)

15. Bulletin signaletique des telecommunications, CNET. Monthly supplement to Annales des telecommunications, 1946--. About 12,000 abstracts per year.

2.1: A400 Physics

1. Solid State Abstracts. Cambridge, Mass. Monthly, 1960--(formerly Semiconductor Electronics). Card service. About 5000 abstracts per year, including patents.
2. Reports on Progress in Physics. IP and PS. Nearly annual, 1945--. Cumulative index (v.1-15) in v.15, 1952.
3. Nuclear Science Abstracts. AEC. Semimonthly, 1947--. About 33,000 abstracts per year.
4. Meteorological and Geoastrophysical Abstracts. AMS. Monthly, 1950-59 as Meteorological Abstracts; renamed 1960. About 11,000 abstracts per year; card issues and monthly UDC and permuted title indexes.
5. Geophysical Abstracts. USGS. Quarterly, 1929--. About 1600 abstracts per year.
6. Geoscience Abstracts. AGI. Monthly, 1959--. About 4500 abstracts per year.
7. Physikalische Berichte. VDPG. Monthly, 1920--. Merger of Beiblätter zu den Annalen der Physik. (1877-1919) and the annual Fortschritte der Physik (1847-1919). Over 15,000 abstracts per year.
8. Zentralblatt für Kernforschung und Kerntechnik. Akademie. Monthly, 1961--; about 10,000 abstracts per year. (Was Kerntechnik section of Technisches Zentralblatt, 1958-60).
9. Rheology Abstracts: A Survey of World Literature. BSR. Quarterly, 1958--(formerly carried in Bulletin of the BSR). About 700 abstracts per year.

2.1: A500 Chemistry

1. Spectrochemical Abstracts. Hilger. Irregular, 1933--. In 6 vols. 1933-55, about 2300 abstracts. Not identical with the Abstracts of Recent Papers Section, 1956--, in Hilger Journal.
2. Chemical Abstracts. ACS. Biweekly, 1907--. Indexes: Annual, 1907--; decennial, 1907-56; quinquennial, 1957--. About 8000

2.1: A500 (Cont.)

abstracts in 1907, over 166,000 in 1962. New subject division (1961) in 73 sections, 59 available in 4 parts for separate subscription: Physical, Inorganic, Analytical (1-14); Organic (26-38); Macromolecular (37,38 and 41-50); Biochemical (54-73). Features added in 1963: Patent Concordance, with the numerical patent index in each issue (corresponding patents in other nations). Keyword Index, a permuted subject index, in each issue.

3. Analytical Abstracts. SAC. Monthly, 1954--. About 5000 abstracts per year.
4. Chemisches Zentralblatt, Akademie. Weekly, 1830--. Cumulative indexes (mostly quinquennial), 1870-81 and 1897--. Suspended 1945-46, and divided (West and East Germany), 1946-50. Several subject sections rich in instrumentation.

2.1: A600 Engineering

1. Bulletin of the BMRA. Irregular, 1948--. About 500 abstracts per year.
2. Corrosion Abstracts. Bimonthly, 1962--. Published as a section in Corrosion, 1945-61. NACE. About 2000 abstracts per year. Independent Swedish abstracts, same title, using NACE filing system; IVA: 10 issues, about 2000 abstracts per year.
3. Technisches Zentralblatt. Akademie. Monthly. Sections: Elektrotechnik, 1951--, about 10,000; Maschinenwesen, 1952--, about 10,000; Energiewesen, 1957--, about 6000 abstracts per year. Kerntechnik (1958-60) separated in 1961 as Zentralblatt für Kernforschung und Kerntechnik.
4. International Aerospace Abstracts. AIAA. Semimonthly, 1961--; annual index is Aerospace Engineering Index. Predecessor was Aeronautical Engineering Review (1940-60) and its annual index Aeronautical Engineering Index. Over 10,000 abstracts per year. Synchronized, 1963, with STAR (NASA) in alternating issue dates and divided coverage: AIAA covers world literature NASA covers only technical reports (its own and others).
5. Zentralblatt für Werkstoffforschung. Springer. Irregular, 1941--.
6. Engineers Digest: Design, Production, Research, Development, London, Monthly, 1940--. (Abstracts, digests, new products and processes). Includes patents.

2.1: A600 (Cont.)

7. Checklist of Periodical Titles. PAL. Semiweekly, 1941--; about 12,000 entries per year. Uniterm Index to Periodicals. Weekly, 1944--; quarterly and annual cumulations; card service; about 12,000 entries per year.
 8. Bulletin signaletique: Service de documentation et d'information technique de l'aeronautique. Cité de l'Air, Paris. Semi-monthly, 1945--. Classified abstracts, on cards; about 9500 per year.
 9. Abregés techniques. Dunod. 11 issues per year, 1962--.
 10. Environmental Effects on Materials and Equipment. PDC. Semi-monthly, 1961--, in two sections: A. Chemical and Biological (continues PDC Abstracts, 1946-61). B. Physical and Engineering. About 2500 abstracts per year from literature and patents.
 11. Battelle Technical Review. BMI. Monthly, 1929--(formerly Battelle Library Review). Original papers and about 15,000 abstracts per year.
 12. Astronautics Information Abstracts: Reports and Open Literature. JPL. Monthly, 1962--. Merger 1962 of two sections: Abstracts Information: Reports (1959-62) and Abstracts Information: Open Literature (1959-62).
 13. Engineering Index. ESL. Annual, 1885-1961; monthly, 1962--. Cards in subject classes, 1928--. About 34,000 abstracts per year. Some classes rich in instrumentation.
 14. ZAA: Zentralblatt der Aero- und Astronautik. Quarterly, 1961--; about 1000 abstracts per year from German literature.
 15. Nuclear Engineering Abstracts. London, Quarterly, 1960--.
 16. STAR: Scientific and Technical Aerospace Reports. NASA. Semi-monthly, 1958--. Subject, name and number indexes in each issue, cumulated quarterly, semiannually and annually. Limited to technical reports; AIAA covers world publications in International Aerospace Abstracts, alternating with STAR in semimonthly dates of issue. Microcopy service standardized with that of AEC, 1963.
 17. Index aeronauticus. Monthly, 1945--. London. About 3500 abstracts per year.
- 2.1: A700 Process Industries. These specialized abstract journals are often the best first source for finding information or literature on the instrument auxiliaries needed in all industrial processes.

2.1: A700 (Cont.)

1. Textile Technology Digest. ITT. Monthly, 1944--. About 6000 abstracts per year.
2. Highway Research Abstracts. NRC. Monthly except August, 1931--. About 500 abstracts per year.
3. Metallurgical Abstracts. IM. Monthly, 1931--(in Journal of the IM). About 6000 abstracts per year.
4. Crerar Metals Abstracts. JCL. Monthly, 1952--; about 2500 abstracts per year.
5. Gas Abstracts. IGT. Monthly, 1945--; also card service. About 3500 abstracts per year.
6. Ansco Abstracts. GAFC. Monthly, 1941--; card service; about 3500 abstracts per year.
7. Jernkontorets Litteraturöversikt. Stockholm. Monthly, 1949--. About 2000 abstracts per year by subjects (including instrumentation).
8. British Ceramic Abstracts. BCeS. Monthly, 1902--(in Transactions of the BCeS). About 3000 abstracts per year.
9. Photographic Abstracts. RPS. 8 issues per year, 1921--; over 2000 abstracts per year.
10. Abstracts and Current Titles. Monthly, 1947--(title was Fuel Abstracts till 1960). About 8500 abstracts per year.
11. Verfahrenstechnische Berichte. Chemical and Process Engineering Abstracts. Verlag Chemie. Weekly, 1932--. Over 5000 abstracts per year; instrumentation included.
12. Abstracts of Photographic Science and Engineering Literature. Columbia for SPSE. Monthly, 1962--. About 4500 abstracts per year..
13. Ceramic Abstracts. ACeS. Monthly, 1922--(in Journal of the ACeS). About 4000 abstracts per year.
14. Summary of Current Literature. SI. Semimonthly, 1921--; about 5000 abstracts per year. (Textile technology and testing).
15. Bulletin de documentation ceramique. ICF. Quarterly, 1940--. About 1000 abstracts per year.
16. Air University Library Index to Military Periodicals. Air University, Maxwell AFB. Monthly, 1949--. Annual and triennial cumulations. (Title, 1949-1962, was Air University Periodical Index).

2.2 BIBLIOGRAPHIES

The distinction between serially published bibliographies and the indexing services entered in 2.1 is not always sharp. Both 2.1 and 2.2 should be consulted when there is doubt.

Caution: Do not rely on prior bibliographies sight unseen. The time they can save is valuable, but the price may be too high if the bibliographer has neglected to define with all possible clarity his subject scope, time coverage and sources consulted. Let bibliographers heed this caution and unfailingly preface their work with proper definitions.

2.2: B100 Instrumentation

1. R. Navrodineanu, Bibliography on Analytical Flame Spectroscopy. CLS, 1962; 766 entries.
2. Bibliography on Medical Electronics. IRE. (IEEE). Annual, 1958--; about 2000 entries per year.
3. Paul D. Freeze, Bibliography on the Measurement of Gas Temperature. NBS Circular 513. 1952; 14 pp.
4. Rasseyanie sveta i infrakrasnaya spektroskopiya: Bibliograficheskii ukazatel', 1928-40. Moscow, 1961; 452 pp. (Light and infrared radiation).
5. Bibliography of Seismology. DO. Semiannual, 1929--; about 1000 entries per year.
6. Soviet Seismology and Seismometry: A Preliminary Bibliography, 1958-60. LC. 1961--; nearly 1000 entries.
7. Titulos Spectroscopic: Un periodico del titulos de omne articulos super themas spectroscopic publicate ubicunque in le mundo. CLS. Semimonthly, 1962--. (Text in Interlingua).
8. International Bibliography of Electron Microscopy. NYSEM. Irregular, 1950--; card service.
9. Bibliografia polarografica. Padua. Annual, 1949--. About 800 entries per year.
10. ITC International Bibliography for Photogrammetry. ITC. Irregular(on cards), 1958--; around 1000 abstracts per year.
11. Bibliography on Thermostatic Bimetals, Low-expansion Alloys, and Their Application. ASME. 1950; 52 pp.

2.2: B100 (Cont.)

12. USSR Missiles Rockets and Space Effort: Bibliographic Record, 1956-60. U. S. Army and GPO, 1960; 49 pp. (References mainly from American sources).
13. C. Halpern and R. J. Moffat, Bibliography of Temperature Measurement, 1953-60. NBS Monograph 27, 1961; 13 pp.
14. Index to the Literature of Spectrochemical Analysis. ASTM. Irregular (about 5 year intervals), 1941--; literature coverage from 1920.
15. Bibliography of Polarographic Literature. Leeds-Northrup, 1950; 2208 references.
16. H. Yakowitz and J. R. Cuthill, Annotated Bibliography on Soft X-Ray Spectroscopy. NBS Monograph 52, 1962; literature of 1950-60; 108 pp.
17. C. A. Mabey, Bibliography on Telemetering. AIEE. (IEEE) Pub. No. S-68, 1954; 46 pp.
18. W. G. Brombacher and T. W. Lashof. Bibliography and Index on Dynamic Pressure Measurements. NBS Circular 558, 1955; 124 pp. 850 references.
19. Tibor W. Marton and Ralph Klein, Soviet Research in Field Electron and Ion Emission, 1955-59. Annotated Bibliography. NBS Tech. Note No. 75, 1960. TN 234, 1964, for 1960-63.
20. Joseph Pearlstein, Measurement of Displacement, Velocity and Acceleration: Bibliography with Abstracts and Index. DOFL. Rept. TR-836, 1960; 188 pp.
21. Vernon E. Coslett, editor, Bibliography of Electron Microscopy. Longmans, 1951; 350 pp.
22. Air Force Scientific Research Bibliography, 1950-56. AFOSR and OAR. v.I, AFOSR 700, 1961; 1150 pp.
23. Japanese Periodicals Index: Natural Sciences, Tokyo. Monthly, 1960--.(English language edition).
24. Australian Science Index: Articles Published in Australian Scientific and Technical Periodicals. CSIRO. Monthly, 1957--. About 4000 entries per year. Supplement in preparation, 1963.

2.2: B200 Automation and Control

1. Current Bibliography on Analog and Digital Computers and Their Applications. LCC. Quarterly, 1954--; about 24,000 entries

per year; text in English and German.

2. International Bibliography of Automatic Control. IFAC. Quarterly, 1962--.
3. **Schrifttumsberichte** aus der Regelungstechnik. VDI, 1941-45 (in 1 issue of VDI Zeitschrift annually). Resumed, 1955--, as Regelung.
4. Warren F. Wade and Emory N. Kemler, Automatic Control Bibliography. Summary Reports, Spring Park, Minn., 1955; 331 pp.
5. Emile and K. Delavenay, Bibliography of Mechanical Translation. Mouton. 1960; 69 pp.
6. Implications of Automation and Other Technological Developments: A Selected Annotated Bibliography. BLS Bull. 1319, 1962; 136 pp.
7. Bibliography on Feedback Control. Applications in Industry. AIEE (IEEE), 1954; 2083 references.
8. N. I. Damaskine, Avtomatizatsiya v mashinostroenii: Bibliograficheskii spravochnik otechestvennoi i inostrannoi literatury za 1950-1959. Moscow, 1961; 522 pp (Automation and machine design; world literature.)
9. A. F. Armstrong and G. I. Maughan, Some Recent Developments in Automatic Control: Information Bibliography. UKAEA, 1957; 178 entries.
10. Bibliography on the Use of IBM Machines in Science, Statistics and Education. Columbia and IBM, 1952; revised 1954 (60 pp), 1956 (81 pp.).
11. Annotirovannyi ukazatel' literatury avtomatika, telemekhanika, pribostroenie. Nauk. Annual, 1958--. (Automation and remote control).

- 2.2: B300 Telecommunications. Interpreting telecommunications broadly, this section includes audio and video transmission, radar, and other ways of propagating signals. Overlap with electricity and electronics necessitated many arbitrary placement decisions; the subject index will help.
 1. C. Marton et al., Bibliography of Electron Microscopy. NBS Circular 502, 1950; 87 pp.(to 1950).
 2. Selected Foreign References on Scatter Propagation of Ultrashort Waves, 1956-60, LC. 1961.

3. Radar and Radio Navigation: Annotated Bibliography, 1950-59. LC. 1960 (AID Rept. 60-55).
4. Wayne B. Nottingham, editor, Bibliography on Physical Electronics. Additon, 1954; 428 pp.
5. C. K. Moore and K. I. Spencer, Bibliography of Electronics. Macdonald, 1961; 411 pp.
6. **Radioastronomiya Annotirovannyi bibliograficheskii ukazatel' otechestvennoi i inostrannoi literatury, 1932-58.** Nauk, 1960; 216 pp.
7. Tokoyushi Kono: Bibliography on Transistors. Tokyo, 1959; 288 pp. (Japanese text).
8. Annotirovannyi ukazatel' literatury po radioelektronika. Moscow. Semimonthly, 1945--.
9. Radiowave Propagation. LC. 1961; 261 entries (Soviet sources).
10. L. A. Manning, Bibliography of the Ionosphere (1925-60). Stanford, 1962, 614 pp.

2.2:B400 General, or Not Otherwise Classified (A)

1. R. M. McClintock and H. P. Gibbons, Mechanical Properties of Structural Materials at Low Temperatures: A Compilation From the Literature. NBS Monograph 13, 1960; 180 pp.
2. Ernest F. Flock and Carl Halpern, Bibliography of Books and Published Reports on Gas Turbines, Jet Propulsion and Rocket Power Plants. NBS Circular 509, 1951; 64 pp. and Supplement (1954).
3. Current Contents: Space, Electronic and Physical Sciences. ISci. Weekly, 1962--.
4. T. M. Flynn. Bibliography of the Physical Equilibria and Related Properties of Some Cryogenic Systems. NBS-TN 56, 1960; 123 pp.
5. Index to the Literature of Magnetism. Bell Labs., Semiannual, 1962--.
6. J. N. Brennan, Bibliography on Shock and Shock-Excited Vibrations. Res. Eng. Bull. No. 68, Penn. State Univ., 1957: v.1, 348 pp.; 1958, v.2, 181 pp.

2.2:B400(A) (Cont.)

7. Lawrence A. Manning, Bibliography of the Ionosphere: Annotated Survey through 1960. Stanford, 1962; 613 pp.
8. Classified Bibliography of X-Ray and Electron Diffraction Papers. Bell Labs. Semiannual.
9. Quarterly Check Lists. ABS. Geophysics, 1960--; about 300 entries per year. Mathematica, 1961--; about 450 entries per year. Physics, 1960--; about 600 entries per year.
10. Bibliography on Plasma Physics and Magnetohydrodynamics. Maryland, 1959.
11. A. Henley and C. L. Schnettler, Electrophoresis Bibliography, AI. Ed. 2, 1955; 290 pp.
12. S. B. Sells and E. S. Barratt, editors. Bioelectronics Abstracts. TCU, 1961; 207 pp.

2.2:B400 General, or Not Otherwise Classified. (B.)

1. British Technology Index. LA. Monthly, 1962--. Includes control, computers and instrumentation.
2. C. K. Moore and K. J. Spenser, Electronics: Bibliographical Guide, MacDonald, 1961; 411 pp.
3. Theodore Besterman, World Bibliography of Bibliographies and of Bibliographical Catalogs, Calendars, Abstracts, Digests, Indexes and the Like. Geneva. Ed. 3, 1956; 5701 columns in 4 v.

2.2B400 General, or Not Otherwise Classified (C).

1. W. Niedergall, Kältetechnik und Thermodynamik. Literaturverzeichnis über Kältetechnik und Kälteanwendung, Klimatechnik, Wärmetheorie, Wärmeübertragung und Wärmewirtschaft. Springer, 1961; 68 pp.
2. AED Information Service: Indexed Bibliography. Conference Papers, Dissertations, Patents, Reports. AED. English language edition; irregular, 1957--. About 6000 entries per year (nuclear energy).
3. Universalbibliographie Technik und Wirtschaft. DT. Annual, 1959--. About 48,000 entries per year.

2.2:B400(C) (Cont.)

4. Zeitschriftenschau. VDI. Semimonthly, 1916--; section in VDI Zeitschrift. (Formerly Technische Zeitschriftenschau). About 7500 entries per year.
5. A. H. Sokoll, Bibliographie zur Aero- und Astronautik: Deutschsprachige Shrifttum 1945-1960. Springer, 1962; 206 pp.
6. Repertorium technicum. NIDR. Irregular, 1931--. Bibliography (books and articles).
7. Bibliographie der Veröffentlichungen über Hydro- und Aerodynamik der Modellen-versuchsanstalt (nun MPI), 1907-59. MPI Mitteilung 25, 1960; 136 pp.

2.2:B400 General, or not Otherwise Classified. (D.)

1. Report on Scientific Work in Meteorology and Physics of the Atmosphere, 1957-59. Nauk and OTS. JPRS Translation No. 7455; nearly 2000 references.
2. Kosmicheskie luchi: Bibliograficheskii ukazatel' 1956-60. Nauk, 1961; 183 pp. (cosmic rays).
3. Indice bibliografico. CIIPN. Monthly, 1952--. Title was Boletin del Centro de Documentacion Cientifica y Tecnica de Mexico, 1952-61. Separate sections for: 1. Physical sciences. 2. Engineering. 3. Chemistry. 4. Medicine. 5. Life sciences. About 100,000 entries per year.
4. A. M. Lukomskaya, Bibliograficheskie istochniki po matematike i mekhanike, izdanye v SSSR v 1917-52. Nauk, 1957; 354 pp. Supplement, 1953-60. 1963; 272 pp.

2.3 BOOKS, MONOGRAPHS, REFERENCE WORKS

This guide generally excludes separates (library talk for single publications, too small to be books, too miscellaneous to classify). Exceptions are separates which grew up to book size, at least in utility, and are too significant to be ignored. Separates include dissertations, bulletins, technical reports and a variety of single publications issued by government agencies, scientific societies, etc., through whose publication lists they can be traced.

2.3: 1000 Reference Works, Handbooks, Data Compilations..(A.)

1. Robt. H. Perry, Cecil H. Chilton and Sidney D. Kirkpatrick, eds., Chemical Engineers Handbook. McGraw-Hill. Ed. 4, 1963.

2.3:1000(A) (Cont.)

2. H. L. Horton, editor. *Machinery's Handbook. Industrial.* Ed. 16, 1959; 2104 pp.
3. Edw. U. Condon & Hugh Odishaw, *Handbook of Physics.* McGraw-Hill, 1958; 1504 pp.
4. Archer E. Knowlton, editor, *Standard Handbook for Electrical Engineers.* McGraw-Hill. Ed. 9, 1957; 2230 pp.
5. W. E. Forsythe, editor, *Smithsonian Physical Tables. Smithsonian Meteorological Tables..* 1951; 527 pp.
6. Dwight E. Gray, editor, *AIP Handbook.* AIP, 1957; 8 sections.
7. Chas. L. Mantell, editor. *Engineering Materials Handbook.* McGraw-Hill, 1958; 1906 pp.
8. Darle W. Dudley, editor. *Gear Handbook: Design, Manufacture and Application of Gears.* McGraw-Hill, 1962; 24 sections.
9. Ovid W. Eshbach, editor, *Handbook of Engineering Fundamentals.* Wiley, Ed. 2, 1952; 1322 pp.
10. Jos. M. Juran, editor, *Quality Control Handbook.* McGraw-Hill. Ed. 2, 1962; 1220 pp.
11. ASME Handbook. McGraw-Hill. Ed. 1. I. O.J.Horger, *Metals Engineering: Design,* 1953; 405 pp. II. S.L.Hoyt, *Metals: Properties,* 1954; 445 pp. III. Jesse Huckert, *Engineering Tables,* 1956; 692 pp. IV. R.W.Bolz, *Metals Engineering: Processes,* 1958; 448 pp.
12. T. Croft and C. C. Carr, *American Electricians Handbook.* McGraw-Hill. Ed. 8, 1961; 1773 pp.
13. Harry D. Husky and G. A. Korn, *Computer Handbook.* McGraw-Hill, 1961; 1288 pp.
14. *Handbook of Geophysics.* AF and Macmillan, 1960; 22 sections.
15. Robt. W. Landee, D. C. Davis and A. P. Albrecht, *Electronic Designers' Handbook.* McGraw-Hill, 1957; 23 sections.
16. Miklos I. Hetenyi, *Handbook of Experimental Stress Analysis.* Wiley, 1950; 1077 pp.
17. Lloyd P. Hunter, editor, *Handbook of Semiconductor Electronics.* McGraw-Hill. Ed. 2, 1962; 900 pp.
18. Henry Jasik, editor, *Antenna Engineering Handbook.* McGraw-Hill, 1961; 1013 pp.

2.3:1000(A) (Cont.)

19. Clifford Strock, editor, Handbook of Air Conditioning, Heating and Ventilating. Industrial, 1959; 1112 pp.
20. Frank W. Wilson and P. D. Harvey, Tool Engineers Handbook. McGraw-Hill. Ed. 2, 1959; 103 sections.
21. Norbert A. Lange, editor, Handbook of Chemistry. McGraw-Hill. Ed. 10, 1961; 1969 pp.
22. Robt. I. Sarbacher, Encyclopedic Dictionary of Electronics and Nuclear Engineering. Prentice-Hall, 1959; 1417 pp.
23. Metals Handbook. ASM. Ed. 7, 1948. Carried to 1960 by supplements. Ed. 8, 1961--, v. I. Properties and Selection of Metals, 1300 pp. v. II. Heat Treating, Cleaning and Finishing, 1964; 700 pp.
24. Harold Pender, editor, Electrical Engineers' Handbook. Wiley. Ed. 4, 1949-50. I. Electric Power, 1716 pp. II. Communication: Electronics, 1618 pp.
25. Reactor Handbook. AEC and Wiley. Ed. 2, 1960-62; 4 v. I. Materials, 1207 pp; II. Fuel Processing, 665 pp; IIIA, Physics, 287 pp; IIIB, Shielding, 313 pp.
26. J. K. Salisbury & C. Carmichael, editors. Kent's Mechanical Engineers' Handbook. Wiley. Ed. 12, 1950. I. Power, 1409 pp. II. Design and Production, 1611 pp.
27. Chas. D. Hodgman, editor, Handbook of Chemistry and Physics. Chemical. Ed. 44, 1963; 3640 pp.
28. Theodore Baumeister, editor, Marks' Mechanical Engineers Handbook. McGraw-Hill. Ed. 6, 1958; 2320 pp.
29. Wilhelm Flügge, editor, Handbook of Engineering Mechanics. McGraw-Hill. Ed. 1, 1962; 88 sections.

2.3:1000 Reference Works (B)

1. Richard Glazebrook, Dictionary of Applied Physics. Macmillan, 1922-23; 172 monographs in 5 vols.
2. Alex. Goldsmith, Thos. E. Waterman & H. J. Hirschhorn, editors, Handbook of Thermophysical Properties of Solid Materials. In 5 v.: I. Elements. II. Alloys. III. Ceramics. IV. Cermets, Intermetallics, Polymerics and Composites. V. Appendix and Indexes. Macmillan, 1961.
3. Fritz Langford-Smith, Radiotron Designs Handbook. RCS. Ed. 4, 1953; 1498 pp.

2.3 :1000 Reference Works. (C)

1. G. Bleisteiner and W. von Mangoldt, editors, *Handbuch der Regelungstechnik*. Springer, 1961; 1516 pp; 1244 references.
2. Mogens A. Blom, editor, *E1-Haandbogen: Anlaeg af installationer, Maskiner og motorer; reparationsteknik*. Copenhagen. Ed. 2, 1951; 794 pp. (Electrical devices).
3. H. Ebert, editor. *Physikalisches Taschenbuch*. Vieweg. Ed. 3, 1962; 611 pp.
4. *Handbuch der Physik*. Springer. New ed., 1955--; 54 v. Monographs in German, English or French; indexes in German and English. Groups: I. Mathematische Methoden (v.1-2). II. Prinzipien der theoretischen Physik. (v.3-5). III. Mechanisches und thermisches Verhalten der Materie (v.6-15). IV. Elektrisches und magnetisches Verhalten der Materie (v.16-23). V. Optik (v. 24-29). VI. Roentgenstrahlen und Korpuskularstrahlen (v.30-34). VII. Atom- und Molekularphysik (v.35-37). VIII. Kernphysik (v.38-45; v. 45 is Nuclear Instrumentation). IX. Kosmische Strahlung (v.46). X. Geophysik (v.47-49). XI. Astrophysik (v.50-54).
5. Josef Kroenert, editor, *Handbuch der technischen Betriebskontrolle*. Akademische. v.2. Mengenmessungen in Betrieb, 1955; 662 pp. v.3. *Physikalische Messmethoden*. Ed. 3, 1959; 627 pp. v.4. *Physikalisch-chemische Analyse im Betrieb*, 1953; 621 pp.
6. Maurice D. Papin, editor, *Electrotechnique, electronique, telecommunications: Notes et formules de l'ingenieur*. Paris, 1962; 2146 pp.
7. F. Sass, C. Bouche' and A. Leitner, editors, *Dubbek Taschenbuch für den Maschinenbau*. Springer, Ed. 12, 1961. Vols. I and II 884 and 970 pp.
8. K. Steinbuch, editor, *Taschenbuch der Nachrichtenverarbeitung: Grundlagen und Technik der Rechnerautomaten, Datenverarbeitung und Maschinensteuerung*. Springer, 1962; 1521 pp.; 2835 references.
9. Wilhelm C.W.D.Wiens & Fritz F. Harms, editors, *Handbuch der Experimental-Physik*. Akademische. 1926-1935; v. 1-26 and Supplements I, II bound in 49 vols.
10. *Zahlenwerte und Funktionen aus Physik, Chemie, Astronomie, Geophysik und Technik*. (Landolt-Börnstein). Ed. 6 in 4 v., 1950--. I. Atom- und Molekularphysik, 5 pts., 1950-55; 3203 pp. II. Eigenschaften der Materie, 10 pts., 1956-(some parts still in preparation, 1963). III. Astronomie und Geophysik, 1962

795 pp. IV. Technik, 1955--, 3 parts (Part 2 in preparation, 1963).

2.3:1100 Design of Experiments; Technique. Entered for their interest to designers and users of instruments.

1. Ronald A. Fisher, Design of Experiments. Hafner, Ed. 7, 1960; 248 pp.
2. Philip M. Morse and H. Feshbach, Methods of Theoretical Physics. McGraw-Hill, 1953; 1978 pp. in 2 v.
3. Edmund V. Cowdry, Laboratory Technique in Biology and Medicine. Williams. Ed. 3, 1952; 282 pp. Ed. 4 in prepn; 1964.
4. Ronald A. Fisher, Statistical Methods for Research Workers. Hafner. Ed. 13, 1958; 356 pp.
5. Oscar Kempthorne, Design and Analysis of Experiments. Wiley, 1952; 631 pp.
6. Wm. G. Cochran and G. M. Cox, Experimental Designs. Wiley, Ed. 2, 1957; 611 pp.
7. B. Adkins, K. F. Raby, A. W. Blackhurst, E. A. Binney & A. L. Whiteley, Rotating Amplifiers: Amplidyne, Matadyne, Magnicon, and Magnavolt and Their Use in Control Systems. George Newnes, Ltd. London, 1954.
8. J. Thewlis, R. C. Glass, D. J. Hughes and A. R. Meetham, editors, Encyclopaedic Dictionary of Physics. Pergamon, 1964; 8000 pp.; v. 1-7, A-Z; v. 8, Subject Index; v. 9, about 1000 pp., Multilingual Glossary of Physical Terms (English, French, German, Russian, Japanese, Spanish). Annual subject supplements.
9. W. E. Barr and V. J. Anhorn, Scientific and Industrial Glassblowing and Laboratory Techniques. Instruments. Ed. 2, 1959; 408 pp.
10. H. J. J. Braddick, Physics of Experimental Method. Wiley, 1954; 404 pp.

2.3:1200 Instrumentation: General. (A)

1. Forrest C. Tyson, Jr. Industrial Instrumentation. Prentice-Hall. 1961; 368 pp.
2. Howard P. Kallen, Handbook of Instrumentation and Controls. McGraw-Hill. Ed. 1, 1961; 13 sections.
3. T. G. Beckwith and N. L. Buck, Mechanical Measurements. Addison, 1961; 559 pp.
4. R. J. Sweeney, Measurement Techniques in Mechanical Engineering. Wiley, 1953, 309 pp.
5. Standards and Practices for Instrumentation. ISA, 1963, 300 pp.
6. Jas. E. Randall, Elements of Biophysics. Yearbook. Ed. 2, 1962; 339 pp. Instrumentation; control systems; mechanics; electricity; radioisotopes.
7. Werner G. Holzbock, Instruments for Measurement and Control. Reinhold. Ed. 2, 1962; 391 pp.
8. Grady C. Carroll, Industrial Instrument Servicing Handbook. McGraw-Hill, 1960; 886 pp.
9. Ernest B. Jones, Instrument Technology. Butterworth. v. 1. Pressure, Level, Flow, Temperature. 1953, 315 pp. v.2. Instruments for Analysis. 1956; 208 pp. v. 3. Telemetering and Automatic Control. 1957; 198 pp.
10. Igor Bazovsky, Reliability: Its Theory and Practice. Prentice-Hall. 1961; 320 pp.
11. Proceedings of the National Conference on Instrumentation. R. J. Jeffries, editor. Michigan State College, 1953.
12. Douglas M. Considine, editor, Process Instruments and Controls Handbook. McGraw-Hill, 1957; 13 sections. Instrumentation glossary by Joshua Stern.
13. Manoel F. Behar, Handbook of Measurement and Control. Instruments. Ed. 1, 1952, 288 pp.; Ed. 2, 1954, 216 pp.
14. Arthur Elliott & J.H. Dickson, Laboratory Instruments: Their Design and Application. Tudor, 1953; 414 pp.
15. Austin E. Fribance, Industrial Instrumentation Fundamentals. McGraw-Hill, 1962; 784 pp.

2.3:1200(A) (Cont.

16. C. S. Draper, Walter McKay & Sidney Lees, Instrument Engineering. McGraw-Hill. In 3 vols. I. Methods for Describing the Situations of Instrument Engineering, 1952, 288 pp. II. Methods for Associating Mathematical Solutions with Common Forms, 1953, 827 pp. III. Applications of the Instrument Engineering Method. Part I. Measurement Systems, 1955; 879 pp.
17. Donald P. Eckman, Industrial Instrumentation. Wiley, 1950; 396 pp.
18. Wesley E. Woodson, Human Engineering Guide for Equipment Designers. California, 1954; 246 pp.

2.3:1200 Instrumentation: General. (B).

1. Arthur W. Judge, Engineering Precision Measurements. Macmillan. Ed. 3, 1957; 447 pp.
2. Guide to Instrument Design. BSIRA and Taylor, 1963; 444 pp.
3. Instrument Manual. United. Ed. 1, 1949; Ed. 2, 1953; Ed. 3, 1960, 743 and 100 pp.
4. F. Twyman, Prism and Lens Making. Hilger. Ed. 2, 1952; 629 pp.
5. Edw. W. Battey, editor, Instrument Encyclopedia. TP. Ed. 1, 1958, 292 pp.

2.3:1200 Instrumentation: General. (C).

1. Chas. Deve, Travail des verres d'optique de precision. Paris. Ed. 3, 1949. Translated by T. L. Tippell as Optical Workshop Principles. Hilger, Ed. 2, 1954; 436 pp.
2. J. Idrac, Mesure et Instrument de Mesure. Dunod. Ed. 4, 1960; 125 pp.
3. M. Denis-Papin, J. Vallot and A. Fouille. Aide-Memoire metrologie appliquée: Méthodes et instruments de mesure. Dunod. Ed. 3, 1959; 300 pp.
4. Acta IMEKO: Proceedings of the Instrument and Measurements Conference. IMEKO I. Budapest, 1958; 5 v. IMEKO II, Budapest, 1961, 5 v. IMEKO III, Stockholm, September 1964.
5. Siegfried John, Fernmesstechnik. I. Allgemeines über Verfahren für kürzere Entfernung. Karlsruhe, 1951, 100 pp.
6. F. I. Havlicek. Einführung in das Korrigieren optischer Systeme. Stuttgart. 1960; 91 pp.

7. Proceedings of the International Instruments and Measurements Conference. IVA. I, 1947, 252 pp.; II. 1949, 314 pp.; III. 1952, 450 pp.; IV. no data. V. 1960, Academic Press, 1961; v.1, Automatic Process Control, Physical Methods of Chemical Analysis, pp.1-506. v.2, Nuclear Instrumentation; Measurement of Electric and Magnetic Quantities; Reactor Control. pp. 507-1227.

2.3:1230 Instrumentation: Devices. (A)

1. Jas. Spencer, Maintenance and Servicing of Electrical Instruments. Instruments. Ed. 3, 1951; 256 pp.
2. Gomer L. Davies, Magnetic Tape Instrumentation. McGraw-Hill, 1961 263 pp.
3. Transducer Compendium. ISA, 1963; 500 pp.
4. Elliott J. Siff and C.L.Emmerich, Engineering Approach to Gyroscopic Instrumentation. Speller, 1960; 120 pp.
5. Peter K. Stein, Measurement Engineering. v.1. Fundamentals (19 chapters). v.2. Applications. Non-selfgenerating Transducers (10 chapters). Peter K. Stein, 1963.
6. T. N. Whitehead, Design and Use of Instruments and Accurate Mechanism. Dover, 1954, 283 pp.
7. David B. Kret, Transducers: A Compilation Useful Primarily in Oscillography. DuMont, Ed. 2, 1953; 151 pp.
8. Mills Dean and R. D. Douglas, editors, Semiconductor and Conventional Strain Gages. Academic Press, 1962; 381 pp.
9. Grady C. Carroll, Industrial Process Measuring Instruments. McGraw-Hill, 1962; 454 pp.
10. Resistance Strain Gages. NBS Symposium, 1954; NBS Circular 528; 140 pp.
11. Chas. C. Perry and H. R. Lissner, Strain Gage Primer. McGraw-Hill. Ed. 2, 1962; 332 pp.
12. Gordon R. Partridge, Principles of Electronic Instruments. Prentice-Hall, 1958; 393 pp.
13. Harold E. Soisson, Electronic Measuring Instruments. McGraw-Hill, 1961; 352 pp.

2.3:1230(A) (Cont.)

14. Arthur Elliott & J. Home Dickson, Laboratory Instruments: Their Design and Application. Tudor. Ed. 2, 1960; 514 pp.
15. Preferred Precision Instrument Components. BuOrd Pamphlet 1755, First Revision. GPO, 1958; 18 sections.
16. K. S. Lion, Instrumentation in Scientific Research: Electrical Input Transducers. McGraw-Hill, 1959; 324 pp.

2.3:1230 Instrumentation: Devices (B)

1. Edw. W. Golding, Electrical Measurements and Measuring Instruments. Pitman, Ed. 4, 1955; 913 pp.
2. Wm. Alexander, Electrical Instruments and Measurements. Cleaver-Hume, 1951; 352 pp.
3. Peter J. Geary, Torsion Devices: Survey of Their Design, Construction and Use. BSIRA Research Rept. R249, 1960; 142 pp.; bibliography.
4. J. Yarnell, Resistance Strain Gages: Their Construction and Use. London, 1951; 128 pp.
5. Guide to Instrument Design. BSIRA and Taylor, 1963; 444 pp.
6. E.H.W.Banner, Electronic Measuring Instruments. Macmillan. Ed. 2, 1958; 496 pp.; translated as Instruments electroniques de mesure, by A. Maitre and M. Bouvier, Dunod, 1959; 480 pp.
7. Bernard Hague, Alternating Current Bridge Methods for the Measurement of Inductance, Capacitance and Effective Resistance at Low and Acoustic Frequencies. Pitman. Ed. 5, 1957; 650 pp.

2.3:1230 Instrumentation: Devices (C)

1. Jacobus J. Koch et al., Strain Gages: Theory and Application. Philips, 1952. (Also issued in German and French).
2. Hans Newmann, Messen mit elektrischen Geräten: Grundlagen und Anwendungen. Springer, 1960; 640 pp.; bibliography
3. H. Kieffer, Jauges de tolerance et controle des pieces. Dunod. Ed. 2, with ISO tolerances, 1961; 390 pp.
4. Hans F. Grave, Gleichrichtermesstechnik: Gleichrichter und Umformer für Messzwecke und ihre Anwendung. Akademische. Ed. 2, 1957; 305 pp.

5. P. Nashin, Technologie et calcul pratique des systemes asservis: Regulateurs et servomecanismes. Dunod. Ed. 2, 1958; 448 pp.
6. Floris Koppelmann, Wechselstrommesstechnik unter besonderer Berücksichtigung des mechanischen Präzisionsgleichrichters. Springer, 1956; 225 pp.
7. Uri Zelbstein, Technique et utilisation des jauge de contrainte. Dunod, 1956; 255 pp. (Strain Gages).
8. L. Kratz, Glaselektrode und ihre Anwendungen. Darmstadt, 1950; 377 pp.
9. Albert Palm, Heinz Roth and E. G. Schlosser, Registrerinstrumente. Springer, Ed. 2, 1959; 255 pp.
10. Rudolf Schneider, Dreidraht-Gewindemessverfahren. VEB, 1960; 90 pp.
11. Paul M. Pflier, Elektrische Messgeräte und Messverfahren. Springer. Ed. 2, 1957; 287 pp.
12. Theodor Walcher, Trockengleichrichter-Vielfachmessgerät. Springer, 1950; 144 pp.
13. Karl Schmiedel, Prüfung der Elektrizitäts-Zähler: Messeinrichtungen, Messmethoden und Schaltungen. Springer, Ed. 4, 1954; 234 pp.
14. Paul M. Pflier, Elektrische Messungen mechanischer Größen. Springer. Ed. 4, 1956; 276 pp.
15. Hanns Körwien, Messwerkzeuge; Werkstattmessungen. Leipzig. Ed. 5, 1950; 222 pp.
16. H. Roth and E. G. Schlosser, Registrer-instrumente. Springer, Ed. 2, 1959; 255 pp.

2.3:1230 Instrumentation: Devices. (D)

1. Electronic Measuring Instruments and Equipment (translations of selected Russian papers). OTS Access No. 60-51106. OTS, 1962; 415pp. Applied Physics, Instruments and Ultrasonic Equipment (same), OTS Access No. 60-41094; 288 pp.
2. O. Horňá, Tensometrické měřítka (Strain Gages). CAV. 1960; 246 pp.

1. S. M. Elonka and A. R. Parsons, Standard Instrumentation Questions and Answers for Production-Processes Control. v. 1. Measuring Systems. v.2. Control Systems. McGraw-Hill, 1962: 238 & 244 pp.
2. George R. Pitman, Jr., editor, Inertial Guidance. Wiley, 1962; 481 pp.
3. H. F. Grave, Elektrische Messung nichtelektrischer Größen. Akademische, 1962; 532 pp.
4. H. Weingraber, Technische Härtemessung: Grundlagen, Geräte, Durchführung. 1952; 350 pp.
5. Proceedings of the National Pulp and Paper Instrumentation Symposium (3rd). ISA, 1963; 251 pp.
6. Hans Faltin, Messverfahren und Messgeräte der Kraft- und Wärme-wirtschaft. Knapp., Ed. 2, 1955; 624 pp.
7. Roosevelt Griffiths, Thermostats and Temperature Regulating Instruments. Griffin. Ed. 3, 1951; 217 pp.
8. Paul Werkmeister, Geodätische Instrumente. Akademische. Ed. 2, 1950; 181 pp.
9. Adolf Heckelmann, Praktische Vermessungskunde: Einfache Aufnahmen. Instrumente und Wägungen. Essen, 1951; 525 pp.
10. Chas. B. Bread, G. L. Hosmer and A. J. Bone, Principles and Practice of Surveying. v. 1, Ed. 9, 1958, Elementary Surveying; 717 pp. v. 2, Ed. 8, 1962, Higher Surveying; 543 pp.
11. Werner Oeser, Prüfgeräte für die Textilindustrie. Stuttgart, Ed. 2, 1952; 272 pp.
12. W. E. K. Middleton and A. E. Spilhaus, Meteorological Instruments, Toronto, Ed. 3, 1953; 286 pp.
13. Physics of Particle Size Analysis. IP. 1954; 218 pp.
14. K. Günther, Messtechnik. DBP. Hamburg, 1962; 494 pp. (Electrical measurements).
15. W. Gohlke, Einführung in die piezoelektrische Messtechnik. Akademische. Ed. 2, 1959; 278 pp.
16. H. Watteeuw, Meetinstrumenten en meetmethoden bij den machinebouw. Brugge. Ed. 3, 1948; 2 vols.

17. John D. Isaacs and C.J.O'Diselin, editors, Oceanographic Instrumentation (Conference Report). NAS-NRC Pub. 9, 1952; 232 pp.
18. Air Sampling Instrumentation. ACGIH. Ed. 2, 1962; 153 instrument descriptions. (Ed. 1, 1960, was successor to Encyclopedia of Instrumentation for Industrial Hygiene).
19. Richard H. Cerni and L. E. Foster, Instrumentation for Engineering Measurement. Wiley, 1962; 456 pp.
20. Roy D. Gaul et al., editors, Marine Sciences Instrumentation: ISA Conference. Plenum, 1962; 354 pp.

2.3:1300 Automation and Control: General. (A)

1. Norbert Wiener, Cybernetics or Control and Communication in the Animal and the Machine. Wiley. Ed. 2, 1961; 212 pp.
2. Byron K. Ledgerwood, Control Engineering Manual. McGraw-Hill, 1957; 200 pp.
3. Harry H. Goode and R. E. Machol, System Engineering: Introduction to the Design of Large-Scale Systems. McGraw-Hill, 1957; 551 pp.
4. Wm. R. Ahrendt and J. F. Taplin, Automatic Feedback Control. McGraw-Hill. Ed. 1, 1951; 412 pp.
5. M. C. Yovits, G. T. Jacobi and G. D. Goldstein, editors, Self-Organizing Systems. 1962 (ONR Conference Report). Washington, 1962; 563 pp.
6. John Markus and Vin Zeluff, Handbook of Industrial Electronic Control Circuits. McGraw-Hill, 1956; 352 pp.
7. G. H. Farrington, Fundamentals of Automatic Control. Wiley, 1951; 285 pp.
8. Howard P. Kallen, Handbook of Instrumentation and Controls. McGraw-Hill. 1961; 692 pp.
9. Wm. W. Seifert and C. W. Steeg, Control Systems Engineering. McGraw-Hill, 1960; 964 pp.
10. Proceedings of the International IFAC Symposium on Optimizing and Adoptive Control (1st). ISA, 1963; 365 pp.
11. R. E. Miller, editor, Maintenance Manual of Electronic Control. McGraw-Hill, 1949; 304 pp.

2.3:1300(A) (Cont.)

12. Eugene M. Grabbe, S. Ramo and D. E. Wooldridge, editors, *Handbook of Automation, Computation and Control*. Wiley, 1958-61. I. Control Fundamentals. II. Computers and Data Processing. III. Systems and Components.
13. Arnold Tustin, editor, *Automatic and Manual Control* (Cranfield Conference Papers). Academic Press, 1952; 595 pp. (bibliographies).
14. Geo. J. Thaler and R. G. Brown, *Analysis and Design of Feedback Control Systems*. McGraw-Hill, Ed. 2 of Servomechanism Analysis, 1960; 648 pp.
15. Harold Chestnut and Robt. W. Mayer, *Servomechanisms and Regulating System Design*. Wiley. v. I, Ed. 2, 1959; 680 pp. v. II, 1955, 384 pp.
16. Cornelius T. Leondes, *Computer Control Systems Technology*. McGraw-Hill, 1961; 636 pp.
17. Walter R. Evans, *Control System Dynamics*. McGraw-Hill, 1954; 277 pp.

2.3:1300 Automation and Control: General. (B)

1. R.H. Macmillan, editor, *Progress in Control Engineering*. Heywood. 1962. v. 1, 300 pp.

2.3:1300 Automation and Control: General. (C).

1. Traitement numerique de l'information: Proceedings of the UNESCO International Conference, 1959; Dunod, 1960; 520 pp.
2. Felix Strecker, *Praktische Stabilitätsprüfung mittels Ortskurven und numerischer Verfahren*. Springer, 1950; 189 pp.
3. Winfried Oppelt, *Kleines Handbuch technischer Regelvorgänge*. Verlag Chemie, 1954; 447 pp.
4. Karl Steinbuch, *Automat und Mensch: Ueber menschliche und maschinelle Intelligenz*. Springer, 1961; 253 pp.
5. L. Leonhard, *Selbsttätige Regelung: Theoretische Grundlagen mit praktischen Beispielen*. Springer. Ed. 3, 1962; 397 pp.
6. F. Demarles and C. Monteil, editors, *Mesures et controle*. Dunod. 1961; 3 v. and a supplement; 2200 pp.
7. G. Bleisteiner, W. von Mangoldt, H. Henning and R. Oether, editors, *Handbuch der Regelungstechnik*. Springer, 1961; 1516 pp.

8. J. C. Gille, P. Decaulne and M. Pelegrin, Techniques de l'automatisme. Dunod. (Servomechanisms). Theorie et calcul des asservissements. Ed. 3, 1963, 322 pp. Methodes modernes d'etude des systemes asservis, 1960; 460 pp. Organes des systemes asservis (by P., G. and D.) Ed. 2, 1959; 464 pp. Problemes d'asservissements avec solutions. (by D., G. and P.) 1958, 170 pp.
9. J. Burton, Pratique de la mesure et du controle dans l'industrie. Dunod. I. Pressions. Niveaux. Debts. Ed. 2, 1963; 400 pp. II. Temperatures. Humidites. Densites. 1959; 392 pp.
10. W. Meyer-Eppler, Grundlagen und Anwendungen der Informationstheorie. Springer, 1959; 446 pp.
11. A. Diemer, Wesen der automatisierten elektronischen Datenverarbeitung und ihre Bedeutung für die Unternehmensleistung. Springer. 1962; 240 pp.
12. Moyens automatiques de gestion. (Conference). Dunod, 1961; 396 pp.
13. K. Steinbuch, editor, Taschenbuch der Nachrichtenverarbeitung: Grundlagen und Technik der Rechenautomaten; Datenverarbeitung und Maschinensteuerung. Springer, 1962; 1521 pp.

2.3:1300 Automation and Control. General. (D).

1. B. S. Sotskov, Elementy avtomaticheskoi i telemekhanicheskoi apparaty. Moscow, 1950; 660 pp.
2. T. Samukawa, Theory and Practice of Automatic Control. JSME. Tokyo, 1948; 2 v.
3. V. V. Solodovnikov et al., editors, Trudy Vtorogo Vsesoyuznogo Soveshchaniya po Teorii Avtomaticheskogo Regulirovaniya. Moscow, 1955; 2 v; v. II translated as Theory of Automatic Control. Proceedings of the 2nd Soviet Conference on Automatic Control. JRPS No. 10975, 1961; 663 pp.
4. Evgenii P. Popov, Dinamika sistem avtomaticheskogo regulirovaniya, Moscow, 1954; 798 pp. Translated as Dynamics of Automatic Control. Pergamon, 1961; 761 pp. Also translated into German.
5. V. V. Solodnikov, Vvedenie v statisticheskuyu dinamiku sistem avtomaticheskogo upravleniya. Moscow, 1952; 367 pp. Translated as Introduction to Statistical Dynamics of Automatic Control Systems. Dover, 1960; 330 pp. A later Russian edition is Statisticheskaya dinamika lineinykh sistem avtomaticheskogo upravleniya. Moscow, 1960; 655 pp.

2.3:1300(D) (Cont.)

6. J. F. Coales, editor. Automatic and Remote Control: Proceedings of the 1st International Congress, 1960. Moscow, 1962, 4 v.; 546 + 545 + 412 + 513 pp.
7. Souhn praci o automatisaci 1959: 3rd Automation Conference, 1959. CAV, 1960; 544 pp.
8. Proceedings of the International Automation Conference, 1958. Madrid, 1961; 411 pp.
9. C. I. Penescu, Automatica si telemecanica sistemelor energetice. Bucharest, 1959-63; 3 v.
10. V. V. Solodnikov, editor, Osnovy avtomaticheskogo regulirovaniya. Moscow, 1954; 2 v. I. Teoriya. II. Elementy sistem avtomaticheskogo regulirovaniya. II, 2. Korrektiruyushchie elementy i elementy vychislitelnykh mashin. Translated by O. Friedericici et al. as Grundlagen der selbstt igen Regelung. Verlag Technik, 1958-59; 1180 pp in 2 v.
11. Evgenii P. Popov, Priblizhennye metody issledovaniya avtomaticheskikh sistem. Moscow, 1960; 792 pp.

2.3:1330 Automation and Control: Devices (A).

1. Geo. J. Thaler and Robt. G. Brown, Analysis and Design of Feedback Control Systems. McGraw-Hill. Ed. 2, 1960; 648 pp.
2. Elihu I. Jury, Sampled-Data Control Systems. Wiley, 1958; 453 pp.
3. Gerhart W. Newmann, Magnetic Control of Industrial Motors. Wiley, 1961. I. AC Control Devices and Assemblies, 273 pp. II. AC Motor Controllers, 273 pp. III. DC Motor Controllers, 334 pp.
4. Harold Chestnut and R. W. Mayer, Servomechanisms and Regulating Systems Design. Wiley, 1951; 505 pp.
5. Wm. R. Ahrendt and C. J. Savant, Jr., Servomechanism Practice. McGraw-Hill. Ed. 2, 1960; 566 pp.
6. Henry D. James and Lewis E. Markle, Controllers for Electric Motors. McGraw-Hill. Ed. 2, 1952; 418 pp.
7. Henri Lauer, R. N. Lesnick and L. E. Masterson, Servomechanism Fundamentals. McGraw-Hill. Ed. 2, 1960; 491 pp.
8. John Riordan, Stochastic Service Systems. SIAM and Wiley, 1962; 139 pp.

2.3:1330(A) (Cont.)

9. John G. Truxall, Automatic Feedback Control System Synthesis. McGraw-Hill, 1955; 675 pp.
10. C. T. Leondes, editor, Computer Control Systems Technology. McGraw-Hill, 1961; 649 pp.
11. Sidney A. David and B. K. Ledgerwood, Electromechanical Components. McGraw-Hill, 1961; 342 pp.
12. Richard W. Jones, Electric Control Systems. Wiley, Ed. 3, 1953; 511 pp.
13. Harry L. Van Trees, Synthesis of Optimum Nonlinear Control Systems. MIT, 1962; 102 pp.

2.3:1330 Automation and Control: Devices. (B).

1. Arnold Tustin, Direct Current Machines for Control Systems. Macmillan, 1952; 306 pp.

2.3:1330 Automation and Control: Devices. (C).

1. Fritz Kümmel, Regel-Transduktoren: Theorie und Anwendungen in der Regelungstechnik. Springer, 1961; 455 pp.; 269 references.
2. C. R. Himmller, Commande hydraulique. Dunod. Ed. 2, 1960; 432 pp.
3. Hans H. Finkelnburg, Mehrspindelautomaten. Springer. Ed. 2, 1960; 315 pp.
4. R. Jaeger, Systemes asservis: Calcul par la methode de "poles et zeros". Paris, 1962; v. 1, 176 pp.; v. 2, 106 plates.
5. Jean Marcus, Telecommande et telemesure radio appliquees aux engins speciaux. Eyrolles; 1962; 280 pp.
6. F. Karpinski, Einspindelautomaten. Springer, 1958; 304 pp.
7. A. Fouille, J. Canuel and A. Penteman, Commande electromagnetique et electronique des machines-outils. Dunod. Ed. 2, 1959; 332 pp.
8. Claude Polgar, Technique de l'emploi des relais dans les machines automatiques. Eyrolles, 1962; 335 pp.
9. Alfredo Susini, Filtri, amplificatori, servomeccanismi. Hoepli, 1960; 305 pp.

2.3:1330 Automation and Control: Devices. (D).

1. W. Pelczewski, Elektrische Maschinenverstärker und ihre Anwendung in der Automatisierungstechnik (translation from Polish). Springer, 1961; 239 pp.
2. D. P. Losev, Elementy i uzly bezkontaktnykh telemekhanicheskikh ustroistv. Leningrad, 1962; 247 pp. (Remote control).
3. Ya. Z. Tsypkin, Teoriya releynykh sistem avtomaticheskogo regulirovaniya. Moscow, 1955; 456 pp. (bibliography, pp. 437-450). Translated by G. Guilleminet and M. Odinetz as Theorie des asservissements par plus-ou-moins. Dunod, 1962; 396 pp.

2.3:1370 Process Control. (A)

1. John C. West, Analytical Techniques for Nonlinear Control Systems. Van Nostrand, 1960; 223 pp.
2. Eli Mishkin and Ludwig Braun, Adaptive Control Systems. McGraw-Hill, 1961; 533 pp.
3. Ernst Pavlik and Bruno Machei, Combined Control System for the Processing Industries: Principles, Components and Instruments of the Teleperm-Telepneu System. Van Nostrand, 1961, 197 pp.
4. M. H. LaJoy, Industrial Automatic Controls. Prentice-Hall, 1954, 278 pp.
5. J. E. Haines, Automatic Control of Heating and Air Conditioning. McGraw-Hill. Ed. 2, 1961; 389 pp.
6. Alwyn J. Young, Process Control. Instruments, 1957; 134 pp.
7. Donald P. Eckman, Automatic Process Control. Wiley, 1958; 368 pp.
8. Automatic Measurement of Quality in Process Plants (Conference Report). SIT and Academic Press, 1958; 320 pp.
9. Royce G. Kloeffler, Industrial Electronics and Control. Wiley, Ed. 2, 1960; 540 pp.
10. R. L. McIntyre, AC Motor Control Fundamentals. McGraw-Hill, 1960; 248 pp.
11. Julius T. Ton, Digital and Sampled-Data Control Systems. McGraw-Hill, 1959; 631 pp.

2.3:1370(A) (Cont.)

12. B. C. Kuo, Automatic Control Systems. Prentice-Hall, 1962; 504 pp.
13. Irmgard Fluegge-Lotz, Discontinuous Automatic Control. Princeton, 1953; 165 pp.

2.3:1370 Process Control. (B).

1. Glossary of Terms Used in Automatic Controlling and Regulating Systems. BSI Standard 1523, 1954; 32 pp.

2.3:1370 Process Control. (C).

1. Johannes Peters, Einschwingvorgänge, Gegenkopplung, Stabilität. Springer, 1954; 181 pp.
2. Georg Hutarew, Regelungstechnik. Springer, Ed. 2, 1961; 180 pp.
3. H. L. Stewart, Commandes hydrauliques et pneumatiques des machines-outils. Dunod. 1961; 180 pp.
4. Y. H. Ku, Analysis and Control of Nonlinear Systems. Ronald, 1958; 360 pp.; bibliography, 1860-1958.
5. F. Hoffmann, Einsatzplanung elektronischer Rechenanlagen in der Industrie. Springer, 1961; 163 pp.
6. Paul Profos, Regelung von Dampfanlagen. Springer, 1962. 384 pp.

2.3:1370 Process Control. (D).

1. Y. Tokahashi, Theory of Automatic Control. Iwanami, 1954 (In Japanese).

2.3:1400 Computers: General. (A). Machines for computation, data processing, mechanical translation, and the like; general, or not limited to one type.

1. Paul Von Handel, editor, Electronic Computers: Fundamentals, Systems and Applications. Prentice-Hall, 1961; 235 pp.
2. Claude E. Shannon and Warren Weaver, Mathematical Theory of Communication. Illinois, 1949; 117 pp.
3. G.D.O'Kelley, editor, Applications of Computers to Nuclear and Radiochemistry. Symposium, Gatlinburg, 1962. NAS and OTS, 1963; 314 pp.

2.3:1400(A) (Cont.)

4. Werner Buchholz, Planning a Computer System. McGraw-Hill, 1962; 336 pp.
5. H. P. Edmundson, editor, Proceedings of the National Symposium on Machine Translation. Prentice-Hall, 1961; 525 pp.
6. Richard S. Varga, Matrix Iterative Analysis. Prentice, 1962; 322 pp.
7. E. C. Berkeley and L. Wainwright, Computers: Their Operation and Applications. Reinhold, 1956; 376 pp.
8. Max Knoll and B. Kazan, Storage Tubes. Wiley, 1952; 143 pp.; bibliography.
9. Symposium on Information Theory, IRE, 1954; Trans. IRE, PGIT-4, 1954; 227 pp.
10. H. Von Foerster and G. W. Zopf, Jr., editors, Principles of Self-Organization. Symposium, Illinois and ONR, 1961. Pergamon, 1962; 541 pp.
11. D. A. C. McGill, Punched Cards: Data Processing for Profit Improvement. McGraw-Hill, 1962; 232 pp.
12. C. C. Gotlieb and J. N. Hume, High-Speed Data Processing. McGraw-Hill, 1958; 338 pp.
13. Leon Brillouin, Science and Information Theory. Academic Press. Ed. 2, 1962, 351 pp.

2.3:1400 Computers: General. (B).

1. Derek W. Morley, Automatic Data Processing, DSIR, 1961; 76 pp.
2. S. H. Hollingdale, High-Speed Computing: Methods and Applications. Macmillan. 1959; 244 pp.
3. Andrew D. Booth, L. Brandwood and J. P. Cleave, Mechanical Resolution of Linguistic Problems. Academic Press, 1958; 306 pp.
4. Cicely M. Popplewell, editor, Information Processing 1962. IFIP and UNESCO. Amsterdam, 1963; 780 pp.
5. Willis Jackson, editor, Communication Theory. IEE Symposium, 1952. Academic Press, 1953, 532 pp.

2.3:1400 Computers: General. (C).

1. H. Soubies-Camy, Techniques binaires et le traitement de l'information. Dunod. 1961; 424 pp.
2. P. Naslin, Principes des calculatrices numeriques automatiques. Dunod. Ed. 2, 1961; 246 pp.
3. Walter Knödel, Programmieren von Ziffernrechenanlagen. Springer. 1961; 202 pp.
4. Ernst P. Billeter, Praktischer Einsatz elektronischer Rechenautomaten. Springer, 1961; 151 pp.
5. G. Lhoste and P. Pepe, Gestion automatisee des entreprises par les machines a cartes perforees. Dunod. Ed. 2, 1961; 452 pp.
6. Karl Steinbuch, editor, Taschenbuch der Nachrichtenverarbeitung. Springer, 1962; 1521 pp.
7. Herbert Schlitt, Systemtheorie für regellose Vorgänge: Statistische Verfahren für die Nachrichten- und Regelungstechnik. Springer, 1960; 344 pp.
8. Jaroslav Kozesnik, editor, Information Theory Statistical Decision Functions, Random Processes. 2nd Prague Conference, 1959; Academic Press, 1961; 843 pp. (Transactions. CAV, 1960; 704 pp.)
9. Ulrich Stille, Messen und Rechnen in der Physik. Vieweg. Ed. 2, 1961; 471 pp.; bibliography.
10. P. Braffort and D. Hirschberg, Computer Programming and Formal Systems. Amsterdam, 1963; 161 pp.

2.3:1400 Computers: General. (D)

1. Vychislitel'nye metody i programmirovaniye. Moscow, 1962; .350 pp. (Computers).
2. Anatolin I. Kitov and N. A. Krinitzkii, Elektronnye vychislitel'nye mashiny. Nauk, 1958; 130 pp. Translated by R. P. Froom as Electronic Computers. Pergamon, 1962; 112 pp.

2.3:1430 Computers: Analog and Digital. (A).

1. Norman R. Scott, "Analog and Digital Computer Technology. McGraw-Hill, 1960; 522 pp.

2. M. V. Wilkes, D. J. Wheeler and Stanley Gill, Preparation of Programs for an Electronic Digital Computer. Addison. Ed. 2, 1957; 238 pp.
3. Montgomery Phister, Jr., Logical Design of Digital Computers. Wiley, 1958; 408 pp.
4. A. E. Rogers and T. W. Connolly, Analog Computation in Engineering Design. McGraw-Hill, 1960; 450 pp.
5. Robt. S. Ledley, Programming and Utilizing Digital Computers. McGraw-Hill, 1962, 568 pp.
6. Walter J. Karplus, Analog Simulation. McGraw-Hill, 1958; 434 pp.
7. M. C. Yovits, editor, Large Capacity Memory Techniques for Computing Systems. (ONR Conference Report). ACM and Macmillan, 1962; 440 pp.
8. Computer Basics. I. Introduction to Analog Computers: II. Analog Computers: Mathematics and Circuitry. III. Digital Computers: Mathematics and Circuitry. IV. Digital Computers: Storage and Logic Circuitry. V. Analog and Digital Computers: Organization, Programming and Maintenance, Sams, 1962; 288 + 224 + 224 + 256 + 224 pp.
9. Franz L. Alt, Electronic Digital Computers: Their Use in Science and Engineering. Academic Press, 1958; 336 pp.
10. Walter J. Karplus and Walter S. Soroka, Analog Methods in Computation and Simulation. McGraw-Hill. Ed. 2, 1959; 496 pp.
11. Ward C. Sangren, Digital Computers and Nuclear Reactor Calculations. Wiley, 1960; 208 pp.
12. Francis J. Murray, editor. Mathematical Machines. v.1. Digital Computers. v.2. Analog Devices. ONR and Columbia, 1961; 300 + 365 pp.
13. A. I. Pressman, Design of Transistorized Circuits for Digital Computers. Rider, 1959; 316 pp.
14. R. K. Richards, Digital Computer Components and Circuits. Van Nostrand, 1957; 511 pp.
15. Survey of Automatic Digital Computers. ONR and OTS, 1953; PB-111,293; 109 pp.
16. Martin H. Weik, Third Survey of Domestic Electronic Digital Computer Systems. BRL Rept. 1115, 1961; 1131 pp.

17. Albert J. Meyerhoff, Digital Applications of Magnetic Devices. Wiley, 1960; 604 pp.
18. Granino M. Korn and Theresa M. Korn, Electronic Analog Computers. McGraw-Hill. Ed. 2, 1956; 452 pp.
19. Samuel B. Williams, Digital Computing Systems. McGraw-Hill, 1959; 229 pp.
20. Stanley Fifer, Analogue Computation. McGraw-Hill, 1960; 1331 pp. in 4 v.
21. Yaohan Chu, Digital Computer Design Fundamentals. McGraw-Hill. 1962; 481 pp.; bibliography.

2.3:1430 Computers: Analog and Digital. (B).

1. Kathleen H. V. Booth, Programming for an Automatic Digital Calculator. Academic Press, 1958; 238 pp.
2. Andrew D. and Kathleen H.V. Booth, Automatic Digital Calculators. Academic Press. Ed. 2, 1956; 261 pp.

2.3:1430 Computers: Analog and Digital. (C).

1. A. P. Speiser, Digitale Rechenanlagen: Grundlagen. Schaltungstechnik, Arbeitsweise, Betriebssicherheit. Springer, 1961; 432 pp.
2. Claus Kessler, editor. Digitale Signalverarbeitung in der Regelungstechnik. VDE, 1962; 324 pp.
3. M. Pelegrin, Machines a calculer electroniques, arithmetiques et analogiques. Dunod, 1959; 395 pp.
4. Danloux Dumesnils, Calcul analogique par courants continus. Dunod, 1958; 272 pp.
5. Walter Ameling, Aufbau und Wirkungsweise elektronischer Analogrechner. Vieweg, 1963; 392 pp.
6. Wolfgang Giloi and R. Lauber, Analogrechnen: Programmierung, Arbeitweise und Anwendung des elektronischen Analogrechners. Springer, 1963; 450 pp.
7. L.P.A. Robichaud, M. Boisvert and J. Robert, Graphes de fluence: Applications a l'electrotechnique et a l'electronique. Calculateurs analogiques et digitaux. Dunod, 1961; 238 pp.

2.3:1430 Computers: Analog and Digital. (D).

1. Gennadii D. Smirnov, Elektronnye tsifrovye mashiny. Moscow, 1958; 87 pp. Translated by G. Segal as Electronic Digital Computers. Pergamon, 1961; 97 pp.
2. Mochinori Goto, editor, Theory and Structure of the Automatic Relay Computer. ETLMark II. EL, 1956; 214 pp.
3. Avenir A. Voronov, editor, Tsifrovye analogi dlya sistem avtomaticheskogo upravleniya; tsifrovye raznostnye analizatory. Nauk. 1960; 195 pp. (Computers).

2.3:1500 Electronics: General.

1. Raymond L. Sanford and I. L. Cooter, Basic Magnetic Quantities and the Measurement of the Magnetic Properties of Materials. NBS Monograph 47, 1962; 36 pp.; bibliography.
2. Allan Lytel, Industrial Electronics. McGraw-Hill, 1962; 464 pp.
3. David B. Langmuir and W. D. Hershberger, editors, Foundations of Future Electronics. McGraw-Hill, 1962; 528 pp.
4. S. R. Calabro, Reliability Principles and Practices. McGraw-Hill, 1962; 371 pp.
5. Industrial Electronics Reference Book. Westinghouse Electric Corp. and Wiley, 1948; 680 pp.
6. Chas. H. Townes, Quantum Electronics: A Symposium. Columbia, 1960; 606 pp.
7. Truman S. Gray, Applied Electronics. Wiley. Ed. 2, 1954; 881 pp.
8. A. Fournier, Electronique et electricite generales. Dunod, 1961; 386 pp.
9. Carl F.J. Overhage, editor, Age of Electronics. McGraw-Hill, 1962; 227 pp.
10. Wm. D. Cockrell, editor, Industrial Electronics Handbook. McGraw-Hill, 1958; 1376 pp.
11. G. Mannino-Patane, Tecnica elettronica. I. Nozioni basilari. II. Applicazioni(1). III. Applicazioni (2) (in preparation, 1963). Hoepli, 1962; 900 + 1160 pp.
12. F.E.Terman & J.M.Pettit, Electronic Measurements. McGraw-Hill, Ed. 2, 1952; 707 pp.

13. Chas. L. Alley and K. W. Atwood, Electronic Engineering. Wiley, 1962; 646 pp.
14. Keith Henney, Craig Walsh and Harry Mileaf, editors, Electronic Components Handbook. McGraw-Hill. I. Resistors, Capacitors, Relays, Switches, 1957; 224 pp. II. Power Sources, Fuses, Instruments, 1958; 357 pp. III. Transformers, Connectors, Terminals, 1958; 180 pp.
15. Carl L. Frederick and Associates, Electronics Test Equipment Sheets. Bethesda, Md., 1954; 2268 pp. in 3 v.
16. Moe Wind, editor, Handbook of Electronic Measurements. Wiley, 1956; 2 v., 484 + 487 pp.
17. Wm. A. Lynch and John G. Truxal, Principles of Electronic Instrumentation. McGraw-Hill, 1961; 464 pp.
18. International Series of Monographs on Electronics and Instrumentation. Pergamon, 1953--. Authors and Titles:
 1. A.B.Gillespie, Signal Noise and Resolution in Nuclear Counter Amplifiers, 1953; 155 pp.
 2. J.B.Birks, Scintillation Counters, 1954; 148 pp.
 3. P.M.Woodward, Probability and Information Theory with Applications to Radar, 1955; 128 pp.
 4. H.Bruining, Physics and Application of Secondary Electron Emission, 1954; 178 pp.
 5. I.A.D.Lewis and F.H.Wells, Millimicrosecond Pulse Techniques Ed. 2, 1959; 417 pp.
 6. C.A.A.Wass, Introduction to Electronic Analogue Computers, 1956; 237 pp.
 7. J.R.Mentzer, Scattering and Diffraction of Radio Waves, 1955; 134 pp.
 8. A.H.W.Beck, Space Charge Waves and Slow Electromagnetic Waves, 1958; 396 pp.
 9. Carl W. Helstrom, Statistical Theory of Signal Detection, 1960; 364 pp.
 10. Jas.G.Holbrook, Laplace Transforms for Electronic Engineers, 1959; 259 pp.
 11. J.Fagot and P. Mazne, Frequency Modulation Theory: Application to Microwave Beams, 1961; 288 pp.
 - 12,13, no data
 14. Morton Nadler, Topics in Engineering Logic, 1962; 231 pp.
19. Test Manual: Instructions for Testing Electrical Apparatus. GE, 1948; 520 pp.
20. Geoffrey W. A. Dummer and N. B. Griffin, Electronic Equipment Reliability. Wiley, 1960; 274 pp.

21. R. Bakish, editor, Proceedings of the 2nd Symposium on Electron Beam Processes. Cambridge, Mass., 1960; 149 pp.
22. R. Kretzmann, Manuel de l'electronique industriel. Dunod. Ed. 2, 1961; 324 pp.
23. E. Norman Lurch, Fundamentals of Electronics. Wiley, 1960; 631 pp.
24. Franz Ollendorff, editor, Technische Elektrodynamik. Springer.
 1. Berechnung magnetischer Felder, 1952; 432 pp.
 - 2, Part 1, Elektronik das Einzelelektrons, 1955; 643 pp.
 - 2, Part 2. Elektronik freier Raumladungen, 1957, 620 pp.
 3. Schwankungerscheinungen in Elektronenröhren, 1961; 468 pp.
 4. Kristallelektronik (in preparation, 1964).
25. Chas. Susskind, editor, Encyclopedia of Electronics, Reinhold, 1962; 974 pp.

2.3:1530 Electronics: Instrumental. (A).

1. John F. Rider and Alfred W. Barber, Vacuum Tube Voltmeters. Rider. Ed. 2, 1951; 422 pp.
2. Robt. G. Middleton, Electronic Tests and Measurements. Sams, 1963; 288 pp.
3. Irving M. Gottlieb, Basic Oscillators. Rider, 1963; 208 pp.
4. Jack J. Studer, Electronic Circuits and Instrumentation Systems. Wiley, 1963; 423 pp.; bibliography.
5. Production and Field Reliability. ASDC, 1959; 305 pp. (Electronic equipment).
6. Paul Ponfield, Jr. and R. P. Rafuse, Varactor Applications. MIT, 1962; 623 pp.
7. Louis D. Smullin and Hermann A. Hans, editors, Noise in Electron Devices. MIT, 1959; 413 pp.
8. George Zwick, Oscilloscope. Gerneback Library. Ed. 2, 1963; 224 pp.
9. Chas. L. Wellard, Resistors and Resistance. McGraw-Hill, 1960; 264 pp.
10. Isaac F. Kinnard, editor, Applied Electrical Measurements. Wiley, 1956; 600 pp.
11. E. Milton Boone, Circuit Theory of Electron Devices. Wiley, 1953; 483 pp.

12. L. B. Arguimbau and Richard B. Adler, Vacuum Tube Circuits and Transistors. Wiley, 1956; 646 pp.
13. Wm. H. Louisell, Coupled Mode and Parametric Electronics. Wiley, 1960; 268 pp.
14. Sol D. Prensky, Electronic Instrumentation. Prentice-Hall, 1963; 534 pp.; bibliography.
15. John F. Rider and S. D. Uslan, Encyclopedia on Cathode Ray Oscilloscopes and Their Uses. Rider. Ed. 2, 1959; 982 pp.
16. Research and Development Reliability ASQC, 1961; 321 pp. (Electronic equipment).
17. R. G. Middleton and L. D. Payne, Using the Oscilloscope in Industrial Electronics. Sams, 1961; 256 pp.
18. RCA Tube Handbook. 8 vols., regularly in process of revision.
19. Sam'l Seely, Electron Tube Circuits. McGraw-Hill. Ed. 2, 1958; 695 pp.
20. Typical Oscilloscope Circuitry. Textronix, Inc., 1961; 12 sections.
21. John R. Pierce, Theory and Design of Electron Beams. Van Nostrand. Ed. 2, 1951; 222 pp.
22. M. H. Aronson, Electronic Circuitry for Instruments and Equipment. Instruments. 1957; 312 pp.

2.3:1530 Electronics: Instrumental. (B).

1. Jerome J. Hamilton. Reflex Klystrons. Macmillan, 1959; 260 pp.
2. Gerald A. Walker, Advances in Electronic Circuit Packaging: Symposium Proceedings. Plenum. Ed. 2, 1962; 381 pp.
3. W. D. Lawson and S. Nielsen, Preparation of Single Crystals. Academic Press, 1958; 255 pp.
4. John M. Carroll, Mechanical Design for Electronics Production. McGraw-Hill. Ed. 1, 1956; 348 pp.
5. Alfred Haas, l'Oscillographe au travail. Rewritten, with R. W. Hallows, as Oscilloscope at Work, Iliffe, 1954; 171 pp.
6. Jacob H. Ruiter, Jr., Modern Oscilloscopes and Their Uses. Holt. Ed. 2, 1955; 346 pp.

2.3:1530(B) (Cont.)

7. A.H.W. Beck, Thermionic Valves. Cambridge, 1954, 570 pp.
8. G.W.A. Dummer and H.M. Nordenberg, Fixed and Variable Capacitors. McGraw-Hill, 1960; 281 pp.
9. G.W.A. Dummer, C. Brunetti and L. K. Lee, Electronic Equipment Design and Construction. McGraw-Hill, 1961; 250 pp.

2.3:1530 Electronics. Instrumental. (C).

1. Werner Herzog, Oszillatoren mit Schwingkristallen. Springer, 1958. 317 pp.
2. R. Guillien, Electronique. Dunod. I. Tubes electroniques a vide. Amplificateurs, 1960; 475 pp. II. Oscillations. Hyperfrequencies. Tubes a gaz, ed. 2, 1961; 475 pp.
3. C. M. Swenne, Thyratrons. Dunod, 1962; 76 pp.
4. Jacques Thurin, Mesures electriques et electroniques. Eyrolles, 1961; 432 pp.
5. F. Klinder, Pratique de l'oscilloscope. Dunod, 1960; 126 pp.
6. R. Champeix, Physique et technique des tubes electroniques. Dunod. v. I. Elements du technique du vide. 1958; 228 pp. v. II. Theorie et fabrication des tubes. 1960; 428 pp.
7. F. Hass, Technique de l'oscilloscope. Mecanisme et parties constituant. Fonctionnement. Dunod, 1961; 136 pp.
8. J. Voge, Tubes aux Hyperfrequencies: Triodes et tetrodes, klystrons, magnetrons, tubes a onde progressive, amplificateurs parametriques et quantiques. CNET, 1959; 260 pp.
9. Heinz Richter, Hilfsbuch für Kathodenstrahl Oszillographie. Munich, Ed. 4, 1961; 271 pp.; bibliography.
10. Max Knoll, Materials and Processes of Electron Devices. Springer, 1959; 484 pp.
11. G. Thalmann, Electronique et radioelectricite: Cours de radioelectricite. Dunod. v. I. Basse frequence. Ed. 2, in preparation, 1963. v. II. Haute frequence, 1959; 320 pp. v. III. Transistors. Modulations de frequence Instruments de mesure. 1961; 328 pp.
12. Wolfgang Gruhle, Elektronische Hilfsmittel des Physikers. Springer, 1960; 200 pp.

13. J. Quinet, Theorie et pratique des circuits de l'electronique et des amplificateurs. Dunod. v. I. Theorie et applications du calcul des imaginaires a l'etude des circuits. Ed. 5, 1962; 256 pp. v. II. Amplificateurs HF et BF Oscillateurs et la modulation. Ed. 5, 1962; 416 pp. v. III. Etude generale de la propagation du courant HF le long les lignes et applications. In preparation, 1964.

2.3:1530 Electronics: Instrumental. (D).

1. Hans W. Fricke, Katodenstrahlzoszillograph. VEB. Ed. 4, 1960; 328 pp.
2. M. Draganescu, Procese electronice in dispositive semiconductoare de circuit. Bucharest, 1962; 444 pp.
3. V. N. Dulin, Elektronnye i ionnye pribory (devices). Moscow, 1963; 544 pp.

2.3:1550 Electronics: Semiconductors. (A). The distinction between transistors and semiconductors is artificial and only a matter of convenience. The line, such as it is, is drawn between works with broader coverage and those devoted specifically to transistors.

1. John N. Shive, Properties, Physics and Design of Semiconductor Devices, Van Nostrand, 1959; 487 pp.
2. Lawrence A. Blackwell and Kenneth L. Kotzebur, Semiconductor Diode Parametric Amplifiers. Prentice-Hall, 1961; 200 pp.
3. Seymour Schwartz, editor. Selected Semiconductor Circuits Handbook, Wiley, 1960; 506 pp.
4. A. K. Jonscher, Principles of Semiconductor Device Operation. Wiley, 1960; 168 pp.
5. J. E. Schwop and H. J. Sullivan, editors, Semiconductor Reliability: AGET Conference. DOD, 1961; 309 pp.
6. Robt. B. Tomer, Industrial Transistor and Semiconductor Handbook. Sams, 1962; 256 pp.
7. Wm. Shockley, Electrons and Holes in Semiconductors with Applications to Transistor Electronics. Van Nostrand, 1950; 558 pp.
8. Robt. K. Willardson and H. L. Goering, Compound Semiconductors. I. Preparation of III - V Compounds. Reinhold, 1962; 553 pp.; bibliography.

2.3:1550(A) (Cont.)

9. Microminiaturization: Proceedings, Symposium on Microminiaturization of Electronic Assemblies. DOFL(HDL). Hayden, 1961; 300+ pp.
10. Lloyd P. Hunter, Handbook of Semiconductor Electronics. McGraw-Hill Ed. 2, 1962; 900 pp.

2.3:1550 Electronics: Semiconductors (B).

1. T. S. Moss, Optical Properties of Semiconductors. Academic Press, 1959; 279 pp.
2. Aldert Van der Ziel, Fluctuation Phenomena in Semiconductors. Butterworth, 1959; 168 pp.
3. John R. Drabble and H. J. Goldsmid, Thermal Conduction in Semiconductors. Pergamon, 1961; 235 pp.
4. Stanley W. Amos, Principles of Transistor Circuits: Introduction to the Design of Amplifiers, Receivers and Other Circuits. Iliffe, Ed. 2, 1961; 210 pp.
5. Eric Wolfendale, editor, Junction Transistor and its Applications. Macmillan, 1958; 394 pp.
6. P. J. Holmes, editor, Electrochemistry of Semiconductors. Academic Press, 1961; 400 pp.
7. John S. Blakemore, Semiconductor Statistics. Pergamon, 1962; 381 pp.
8. Geoffrey W.A.Dummer and J.W.Granville, Miniature and Microminiature Electronics. Pitman, 1961; 310 pp.

2.3:1550 Electronics: Semiconductors (C).

1. G. Fournet, Physique electronique des solides, a l'usage des ingenieurs. Dunod, 1962; 332 pp.
2. Proceedings of the International Conference on Physics of Semiconductors. Rochester, 1958: Pergamon, 1960; 533 pp. Prague, 1960: CAV and Academic Press, 1962; 1133 pp. Exeter, 1962: IP, 1962; 909 pp.
3. Eberhard Spenke, Elektronische Halbleiter: Einführung in die Physik der Gleichrichter und Transistoren. Springer, 1956; 386 pp. Translated by D. Jenny et al. as Electronic Semiconductors. McGraw-Hill, 1958; 402 pp.

2.3:1550(C) (Cont.)

4. Colloque internationale sur les dispositifs a semiconducteurs. Dunod, 1962; v.I. Production des elements semiconducteurs, 796 pp. v. II. Emploi et fiabilite des elements semiconducteurs, 858 pp.
5. A. Petitclerc, Electronique physique des semiconducteurs. Gauthier, 1962; 546 pp.
6. J. P. Suchet, Chimie physique des semiconducteurs. Dunod, 1961; 221 pp.
7. K. M. Koch and R. Reinbach, Einführung in der Physik der Leiterwerkstoffe. Vienna, 1960; 225 pp.
8. J. Smit and H.P.J. Wijn, Ferrites. Philips and Wiley, 1959; 369pp. (Editions also in Dutch and German).

2.3:1550 Electronics: Semiconductors. (D).

1. Abram F. Ioffe, Fizika poluprovodnikov. Nauk. Ed. 2, 1957; 491 pp. Translated as Physics of Semiconductors. Academic Press, 1960; 436 pp.
2. A. N. Frumkin et al., editors, Poverkhnostnye svoistva poluprovodnikov. Nauk, 1962; 232 pp. (Surface properties of semiconductors).
3. I. M. Tsidil'kovskii, Termomagnetye yavleniya v poluprovodnikakh. Moscow, 1960; 396 pp. Translated by A. Tybulewicz as Thermomagnetic Effects in Semiconductors. Academic Press, 1962; 333 pp.
4. Abram F. Ioffe, Poluprovodnikovye termoelementy. Nauk, 1956; 103 pp. Termoelektricheskoe okhlazhdenie. Nauk, 1956; 107 pp. Both translated by A. Gelbtuch as Semiconductor Thermoelements and Thermoelectric Cooling. London, 1957; 184 pp. First title translated by H. Vogel as Halbleiter-Thermoelemente. Akademische 1957; 77 pp.
5. A. I. Gubanov, Kvantogo-elektronnaya teoriya amorfnykh provodnikov, Nauk, 1963. (Amorphous, e.g. liquid or vitreous, conductors and semiconductors).

2.3:1560 Electronics: Transistors. (A).

1. Richard F. Shea, editor, Transistor Circuit Engineering, Wiley, 1957; 468 pp.
2. Leonard Krugman, Fundamentals of Transistors. Rider, Ed. 2, 1958; 168 pp.

3. H. E. Bridgers, J. H. Scaff and J. N. Shive, editors, Transistor Technology, Bell Labs., 1958; 3257 pp. in 3 v.
4. Jos. A. Walston and J. R. Miller, editors, Transistor Circuit Design. Texas Instruments and McGraw-Hill, 1963; 523 pp.
5. Richard B. Hurley, Junction Transistor Electronics. Wiley, 1958; 473 pp.
6. J. Evans, Fundamental Principles of Transistors. Van Nostrand. Ed. 2, 1962; 328 pp.
7. Abraham Coblenz and H. L. Owens. Transistors: Theory and Practice. McGraw-Hill, 1955; 313 pp.
8. Arthur W. Lo, editor, Transistor Electronics. Prentice-Hall, 1955; 521 pp.
9. Wm. D. Bevitt, Transistors Handbook. Prentice-Hall, 1956, 410 pp.
10. Transistor Manual, GE. Ed. 6, 1962; 440 pp.
11. Richard F. Shea, editor. Principles of Transistor Circuits. Wiley, 1953; 535 pp.
12. H. E. Bridgers, J. H. Scaff, J. N. Shive and F. J. Biondi, Transistor Technology. Bell Labs and Van Nostrand, 1958; 661 + 701 + 416 pp.
13. Robt. L. Riddle and M. P. Ristenbatt, Transistor Physics and Circuits. Prentice-Hall, 1958; 428 pp.
14. John C. Linville and J. F. Gibbons, Transistors and Active Circuits. McGraw-Hill, 1961; 515 pp.
15. Leopoldo B. Valdes, Physical Theory of Transistors. McGraw-Hill, 1961; 370 pp.
16. Richard B. Hurley, Transistor Logic Circuits. Wiley, 1961; 363 pp.
17. Wolfgang W. Gärtner, Transistors: Principles, Design and Applications. Van Nostrand, 1960; 675 pp.
18. David DeWitt and A. L. Rossoff, Transistor Electronics. McGraw-Hill, 1957; 425 pp.

2.3:1560 Electronics: Transistors. (B).

1. Thos. R. Scott, Transistors and Other Crystal Valves. Macdonald, 1955; 258 pp.

2.3:1560 Electronics: Transistors (C).

1. H. Richter, Schaltungsbuch der Transistorstechnik. Springer, 1962; 274 pp.
2. H. R. Schlegel, Der Transistor: Allgemeine Grundlagen. Hanover, 1959; 196 pp.
3. F. Hure, Applications pratiques des transistors. Dunod, 1962; 270 pp.
4. R. Aronsohn and A.V.J.Martin, Pratique et theorie des semiconducteurs: Principes, realisation, fonctionnement, utilisation des diodes, transistors et autres semiconducteurs. Dunod, 1961; 408 pp.
5. H. Salow, H. Beneking, H. Krömer and W. von Münche, Transistor: Physikalische und technische Grundlagen. Springer, 1962; 448 pp.
6. L. Pericorne, Pratique des transistors. Dunod, 1962; 176 pp.
7. G. Fontaine, Diodes et transistors. v.I..Theorie generale. Dunod. Ed. 2, 1962; 500 pp.
8. P. A. Neeteson, Transistors a jonctions dans les montages a impulsions. Dunod, 1961; 168 pp.
9. Georg Rusche, Karl Wagner and Fritz Weitzsch, Flächentransistoren: Eigenschaften und Schaltungstechnik. Springer, 1961; 404 pp.
10. D.J.W.Sjobbema, Utilisation des transistors. Dunod, 1962; 116 pp.

2.3:1560 Electronics: Transistors (D).

1. Tranzistory i poluprovodnikovye diody. Moscow. Ed. 2, 1963; 646 pp.
2. Pjotr Mikolajczyk, Universal Vade-Mecum. (World catalog of vacuum tubes and transistors in 7 languages). Warsaw, 1960; 1013 pp.

2.3:1570 Electronics: Functions and Effects.

1. H.S.W.Massey and E.H.S.Burhop, Electronic and Ionic Impact Phenomena. Clarendon, 1952; 669 pp.
2. Heinz Von Foerster and G. W. Zopf, Jr., editors, Principles of Self-Organization:Symposium Transactions, ONR and University of Illinois. Pergamon, 1962; 541 pp.

3. H. Richter, Impulspraxis in Versuchen und Oszillogrammen. v.2. Halbleiterschaltungen: Einführung in das praktische Arbeiten mit elektronischen Impulsschaltungen. Springer, 1961; 208 pp.
4. Paul Eisler, Technology of Printed Circuits: Foil Technique in Electronic Production. Academic Press, 1959; 405 pp.
5. F. H. Lange, Korrelationselektronik. Berlin, 1959; 343 pp.
6. C. G. Cannon, Electronics for Spectroscopists. Wiley, 1960; 340 pp.
7. Samuel J. Mason and Henry J. Zimmermann, Electronic Circuits, Signals and Systems. Wiley, 1960; 616 pp.
8. Simo Laurila, Electronic Surveying and Mapping. Ohio, 1960; 294 pp.
9. Paul E. Pfeiffer, Linear Systems Analysis: Introduction to the Analysis of Discrete-Parameter, Time-Invariant Linear Systems. McGraw-Hill, 1961; 538 pp.; bibliography.
10. Ragnar Holm and Else Holm, Electric Contacts Handbook. Springer, Ed. 3(in English) of Technische Physik der elektrischen Kontaktte. 1958; 522 pp.

2.3:1600 Electricity and Magnetism: General (A).

1. Chas. P. Slichter, Principles of Magnetic Resonance With Examples from Solid State Physics. Harper, 1963; 246 pp.
2. Walter W. Lewis and Clarence F. Goodheart, Basic Electric Circuit Theory. Ronald, 1958; 650 pp.
3. Sundaram Seshu and Norman Balabanian, Linear Network Analysis. Wiley, 1959; 571 pp.
4. Y. H. Ku, Electric Energy Conversion, Ronald, 1959; 522 pp.
5. David C. White and Herbert H. Woodson, Electromechanical Energy Conversion, Wiley, 1959; 646 pp.
6. W. J. Polydoroff, High-Frequency Magnetic Materials: Their Characteristics and Principal Applications. Wiley, 1960; 220 pp.
7. Richard M. Bozorth, Ferromagnetism. Van Nostrand, 1951; 968 pp.; bibliography, 1800 references.
8. Francis B. Silsbee, Extension and Dissemination of Electrical and Magnetic Units by NBS. NBS Circular C531, 1952; 33 pp.
- 8a. R. L. Sanford and I. L. Cooter, Basic Magnetic Quantities and the Measurement of the Magnetic Properties of Materials. NBS Monograph 47, 1962; 36 pp.; bibliography.

2.3:1600(A) (Cont.)

9. Walter C. Michels, Electrical Measurements and Their Applications. Van Nostrand. Ed. 3, 1957; 331 pp.
10. Arthur W. Smith and M. L. Wiedenbeck, Electrical Measurements. McGraw-Hill. Ed. 5, 1959; 307 pp.
11. Melville B. Stout, Basic Electrical Measurements. Prentice-Hall. Ed. 2, 1960; 571 pp.

2.3:1600 Electricity and Magnetism: General. (B).

1. Frank Llewellyn-Jones, Physics of Electrical Contacts. Clarendon, 1957; 219 pp.

2.3:1600 Electricity and Magnetism; General. (C)

1. Johannes Klamt, Berechnung und Bemessung elektrischer Maschinen. Springer, 1962; 336 pp.
2. Eckart Kneller, Ferromagnetismus. Springer, 1962; 792 pp.
3. A. Fouille, Electrotechnique a l'usage des ingenieurs. Dunod.
v.1. Principes, Ed. 6, 1961. 512 pp.
v.2. Machines electriques. Ed. 5, 1960; 440 pp.
v.3. Convertisseurs. Applications de l'energie electrique.
Ed. 5, 1962; 416 pp.
4. P. Baudoux, Electricite. Dunod. v. I. Lois fondamentales, milieux, systemes, circuits, 1960; 242 pp. v.II. Electromagnetisme. Electrostatique. Propagation. 1961; 464 pp.
5. E. Gillon, Cours d'electrotechnique. Dunod.
I. Theories generales. Ed. 4, 1962; 328 pp.
II. Machines electriques.
v.1. Notions fondamentales, Ed. 2, 1958; 386 pp.
v.2. Notions complementaires. Ed. 2, 1957; 503 pp.
III. Centrales, reseaux, applications diverses. Ed. 2, 1960;
572 pp.
6. Werner Jellinghaus, Magnetische Messungen an ferromagnetischen Stoffen. deGruyter, 1952; 163 pp.
7. Physique des forces electrostatiques et leurs applications (International conference report). Dunod, 1961; 452 pp.
8. Th. Wasserrab, Schaltungslehre der Stromrichtertechnik. Springer, 1962; 466 pp.

9. M. Lafosse, *Manuel pratique de mesures electriques et d'essais des machines.* Dunod. Ed. 2, 1959; 240 pp.
10. J. Baurand, *Unites electriques. Appareils de mesure.* Pont de Wheatstone. Dunod, 1961; 308 pp. (v.I of Mesures electriques).

2.3:1600 Electricity and Magnetism: General. (D).

1. B. G. Magarshak, *Elektricheskie izmereniya.* Leningrad. Ed. 2, 1962; 339 pp.

2.3:1630 Electricity and Magnetism: Devices (A).

1. Warren P. Mason, *Electromechanical Transducers and Wave Filters.* Van Nostrand. Ed. 2, 1948; 419 pp.
2. Harold W. Katz, *Solid State Magnetic and Dielectric Devices.* Wiley, 1959; 542 pp.
3. Mitchell P. Marcus, *Switching Circuits for Engineers.* Prentice, 1962; 296 pp.
4. David L. Lafuze, *Magnetic Amplifier Analysis.* Wiley, 1961; 252 pp.
5. Russell M. Kerchner and G. F. Corcoran, *Alternating Current Circuits.* Wiley. Ed. 4, 1960; 602 pp.
6. Gomer L. Davies, *Magnetic Tape Instrumentation.* McGraw-Hill, 1961; 263 pp.
7. Raymond W. Auger and K. Puerschner, editors, *Relay Guide: Compendium of Electromechanical Relays Marketed in the U. S.* Reinhold, 1960; 393 pp.
8. Paul E. Gray, *Dynamic Behavior of Thermoelectric Devices.* Wiley, 1960; 136 pp.
9. Y. H. Ku, *Transient Circuit Analysis.* Van Nostrand, 1961; 448pp.
10. Electric Metermen's Handbook. New York. Ed. 6, 1950; 615 pp.
11. Wm. A. Geyger, *Magnetic Amplifier Circuits.* McGraw-Hill. Ed. 2, 1957; 277 pp.
12. Herbert J. Reich, *Functional Circuits and Oscillators.* Van Nostrand, 1961; 480 pp.; bibliography.

2.3:1630 Electricity and Magnetism: Devices (B)

1. Hector G.M.Spratt, Magnetic Recording. Heywood, 1958; 319 pp.
2. H. Allen Curtis, New Approach to the Design of Switching Circuits. Macmillan, 1962; 673 pp.
3. David J.G.Ives and George J. Janz, Reference Electrodes: Theory and Practice. Academic Press, 1961; 651 pp.

2.3:1630 Electricity and Magnetism: Devices. (C).

1. Fritz Winckel, editor, Technik der Magnetspeicher. Springer, 1960; 614 pp.
2. G. Blet, Photopiles au selenium. Dunod, 1959; 150 pp.
3. Rudolf Langbein and G. Werkmeister, Elektrische Messgeräte: Genauigkeit und Einflussgrößen. Akademische, Ed. 3, 1959; 251 pp.
4. Hans Neumann, Messen mit elektrischen Geräten: Grundlagen und Anwendungen. Springer, 1960; 640 pp.
5. P. Chouquet, Relais électromagnétiques. Performances. Constitution. Mesures. Dunod, 1961; 260 pp.
6. Germanium- und Silizium-Gleichrichteranlagen. AEG, 1962; 131 pp.
7. Erich A.H.Meyer and Curt Moerder, Spiegelgalvanometer und Lichtzeigerinstrumente: Theorie, Anwendung und Konstruktion. Akademische. Ed. 2, 1957; 571 pp.
8. A. Palm, Elektrische Messgeräte und Messeinrichtungen. Springer, Ed. 4 by G. Münch and W. Hunsinger, 1963, 400 pp.

2.3:1630 Electricity and Magnetism: Devices. (D)

1. G. I. Atabekov, Teoreticheskie osnovy relei noi zashchity vysokovolnykh setei. Moscow, 1962; 344 pp.

2.3:1670 Electricity and Magnetism: Functions and Effects.

1. Floris Koppelmann, Wechselstrommesstechnik. Springer, 1956; 225 pp.
2. P. Vernier, Emission photoélectrique et ses applications. Dunod. 156 pp.

3. Gladwyn V. Lago and Donald L. Waidelich, *Transients in Electrical Circuits*. Ronald, 1958, 393 pp.
4. Edw. Peskin, *Transient and Steady-State Analysis of Electric Networks*. Van Nostrand, 1961; 437 pp.; bibliography.
5. Colin Adamson and N.G.Hingorani, *High Voltage Direct Current Power Transmission*. Garraway, Ltd., 1963; 284 pp.
6. Jas. L. Ferns, *Meter Engineering*. Pitman. Ed. 7, 1963; 392 pp.
7. Werner Nürnberg, *Prüfung elektrischer Maschinen und die Untersuchung ihrer magnetischen Felder*. Springer, Ed. 4, 1959; 467 pp.
8. Forest K. Harris, *Electrical Measurements*. Wiley, 1952; 784 pp.
9. G. Funk, *Kurzschluss im Drehstromnetz*. Oldenbourg, 1962; 401 pp.
10. Piezoelektrina a její technické použití. CAV, Prague, 1960; 432 pp.
11. Franz Früngel, *Impulstechnik: Erzeugung und Anwendungen von Kondensatorentladungen*. Akademische. Ed. 2, 1960; 575 pp.
12. Arthur R. Von Hippel, *Dielectrics and Waves*. Wiley, 1954; 284 pp.
13. Vladimir J. Zworykin and E.G.Ramberg, *Photo-Electricity and its Applications*. Wiley, 1949; 494 pp. (Revision of Zworykin-Wilson, Photocells and their Application, Ed. 2, 1934).
14. H. Simon and R. Suhrmann, editors, *Lichtelektrische Effekt und seine Anwendungen*. Springer, Ed. 2, 1958; 747 pp.
15. Robt. M. Fano, Lan Jen Chu and Richard B. Adler, *Electromagnetic Fields, Energy and Forces*. Wiley, 1960; 520 pp.
16. Ernest Frank, *Electrical Measurement Analysis*. McGraw-Hill, 1959; 443 pp.
17. Werner Gohlke, *Einführung in die piezoelektrische Messtechnik*. Akademische. Ed. 2, 1959; 278 pp.
18. Chas. L. Wellard, *Resistors and Resistance*. McGraw-Hill, 1960; 264 pp.
19. Photoconductivity Conference. Penn and RCA, 1954. Wiley, 1956; 653 pp.

2.3:1700 Telecommunications: General. (A). Interpreting telecommunications broadly, this section includes audio and video transmission, radar, and other ways of propagating signals. Overlap with electricity and electronics necessitated many arbitrary placement decisions; the subject index will help.

1. Herbert J. Reich, P. F. Ordung, H. L. Kraus and J. G. Skalnik, *Microwave Theory and Techniques*. Van Nostrand, 1953; 901 pp.
2. David Middleton, *Introduction to Statistical Communication Theory*. McGraw-Hill, 1960; 1140 pp.; bibliography.
3. Richard B. Adler, Lan Jen Chu and Robt. M. Fano, *Electromagnetic Energy Transmission and Radiation*. Wiley, 1960; 621 pp.
4. W. R. Bennett, *Electrical Noise*. McGraw-Hill, 1960; 280 pp.
5. Edw. L. Ginzton, *Microwave Measurements*. McGraw-Hill, 1957; 494 pp.
6. Rudolph E. Langer, editor, *Electromagnetic Waves*. U. S. Army Symposium. Wisconsin, 1962; 396 pp.
7. Elie J. Baghdady, editor, *Lectures on Communication System Theory*. McGraw-Hill, 1960; 617 pp.
8. Arthur F. Harvey, *Microwave Engineering*. Academic Press, 1963; 1313 pp.
9. Jas. R. Wait, *Electromagnetic Waves in Stratified Media*. Macmillan, 1962; 372 pp.
10. Rabindra N. Ghose, *Microwave Circuit Theory and Analysis*. McGraw-Hill, 1963; 418 pp.
11. P. F. Mariner, *Introduction to Microwave Practice*. Academic Press, 1961; 238 pp.
12. M. E. VanValkenburg, *Introduction to Modern Network Synthesis*. Wiley, 1960; 498 pp.
13. Reference Data for Radio Engineers. I.Tel Tel. Ed. 4, 1956; 1150 pp.

2.3:1700 Telecommunications: General. (B).

1. Symposium on Nonlinear Circuit Analysis. BPI. 1953; 411 pp.
2. Douglas E. Clark and H. J. Mead, *Electronic Radio and Microwave Physics*. Heywood, 1961; 521 pp.

2.3:1700 Telecommunications: General. (C).

1. H. Schlitt, Systemtheorie für regellose Vorgänge: Statistische Verfahren für die Nachrichten- und Regelungstechnik. Springer, 1960; 344 pp.
2. H. Meinke and F. W. Gundlach, editors, Taschenbuch der Hochfrequenztechnik. Springer, Ed. 2, 1962; 1641 pp.
3. J. Zenneck and H. Fröhlauf, editors, Bücherei der Hochfrequenztechnik. Akademische. v.6, A. Ditzl, Systeme mit modulierter Trägerwelle, 1958; 144 pp. v.7, E. Philippow, Grundlagen der Elektrotechnik, 1959; 662 pp. v.8, F. Sammer, Schwingungsskreise mit Eisenkernspulen, Ed. 2, 1956; 232 pp. v.9, A. Ditzl, Richtfunkverbindungen, 1960; 218 pp. v.10, G. Wunsch, Theorie und Anwendung linearer Netzwerke. I. Analyse und Synthese, 1961; 378 pp. v.12, G. Wunsch, Moderne Systemtheorie, 1961; 200 pp. v.13, G. Wunsch, Moderne Systemtheorie: Einführung in die Grundlagen, 1962; 199 pp. v.14, W.A.Taft, Fragen zur Theorie der Netzwerke mit veränderlichen Parametern, unter Berücksichtigung der Anwendung auf Abtast- und Digitalregler. (Translated from Russian), 1962; 92 pp.
4. Friedrich Benz, Messtechnik für Funkingenieure, Springer, 1952; 528 pp.
5. E. Fromy, Mesures en radiotechnique. Dunod. Ed. 3, 1958; 784 pp.
6. J. Wosnik, editor, Microwave Tubes: International Congress, Munich, 1960; Academic Press, 1961; 608 pp.
7. J. Aubert, Fernmeldetechnik: Eine systematische Darstellung. Springer, Ed. 2, 1962; 514 pp.
8. Handbuch für Hochfrequenz- und Elektrotechniker. Verlag für Radio-Foto-Technik, Berlin, 1960. (6 v.)
9. Desirant and J. L. Michiels, editors, Electromagnetic Wave Propagation: International Conference, Brussels Universal Exposition. Academic Press, 1960; 730 pp.
10. Helmut Pitsch, Lehrbuch der Funkempfangstechnik, insbesondere der Rundfunkempfangstechnik. Akademische. Ed. 3, v.1, 1959; 632 pp. v.2, 1960; 640 pp.
11. Nicolas von Korshenowsky and W. T. Runge, editors, Lehrbuch der drahtlosen Nachrichtentechnik. Springer. I. Physikalischen Grundlagen der Hochfrequenztechnik, Ed. 3, 1955; 261 pp. II. Antennen und Ausbreitung, Ed. 2, 1956; 332 pp. III. Elektronenröhren, 1957; 391 pp. IV. Verstärker und Empfänger, Ed.

2, 1951; 422 pp. V, Part 1. Grundlagen des elektronischen Fernsehens, 1956; 772 pp. V, part 2. Technik des elektronischen Fernsehens, 1963; 620 pp.

2.3:1700 Telecommunications: General. (D).

1. Vitalii A. Ginzburg, Rasprostranenie elektromagnitnykh voln v plasme. Moscow, 1960; 552 pp. Translated as Propagation of Electromagnetic Waves in Plasma. New York, 1962; 822 pp.

2.3:1730 Telecommunications: Devices (A).

1. Arthur A. Vuylsteke, Elements of Maser Theory. Van Nostrand, 1960; 385 pp.
2. Ronald F. Soohoo, Theory and Application of Ferrites. Prentice-Hall, 1961; 320 pp.
3. R. S. H. Boulding, Radar Pocket Book, Van Nostrand, 1962; 255 pp.
4. P. J. B. Clarricoats, Microwave Ferrites. Wiley, 1961; 260 pp.
5. C. P. Marsden, W. J. Keery and J. K. Moffitt, Tabulation of Data on Microwave Tubes. NBS Handbook 70, 1961; 129 pp. C.P.M. and J.K.M., Tabulation of Data on Receiving Tubes. NBS Handbook 83, 1963; 131 pp.
6. Robt. E. Collin, Field Theory of Guided Waves. McGraw-Hill, 1960; 620 pp.
7. H. F. Storm, Magnetic Amplifiers. Wiley, 1955; 545 pp.
8. Donald J. Povejsil, Robt. S. Raven and Peter J. Waterman, Airborne Radar. Van Nostrand, 1961; 861 pp.
9. John P. Buchanan, Handbook of Piezoelectric Crystals for Radio Equipment Designers. WADC (No. 54-248) and OTS, 1954; 591 pp.
10. Franco Jona and Gen Shirane, Ferroelectric Crystals. Pergamon, 1962; 402 pp.
11. Microwave Theory and Measurements. Prentice-Hall, 1962; 263 pp.
12. Vincent C. Rideout, Active Networks. Prentice-Hall, 1954; 485 pp.
13. Georg Goubau, Electromagnetic Waveguides and Cavities. Pergamon, 1961; 656 pp.

14. Myron H. Nichols and L.L.Rauch, Radio Telemetry. Wiley, Ed. 2, 1956; 461 pp.
15. C. A. Hogg et al., Maser and Lasers. Cambridge, Mass., 1962; 226 pp., bibliography.
16. E. Okress, editor. Crossed-Field Microwave Devices. Academic Press 1961. I. Principal Elements, 648 pp. II. Principal Types, 520 pp.
17. Jerome R. Singer, Maser. Wiley, 1959; 147 pp.
18. Benj. Lax and K.J.Button, Microwave Ferrites and Ferrimagnetics. McGraw-Hill, 1962; 767 pp.
19. P. M. Woodward, Probability and Information Theory, with Applications to Radar. Pergamon, 1955; 128 pp.
20. Merrill I. Skolnik, Introduction to Radar Systems. McGraw-Hill, 1962; 657 pp.
21. Richard A. Waldron, Ferrites: Introduction for Microwave Engineers. Van Nostrand, 1961; 240 pp.; bibliography.
22. Martin R. Redwood, Mechanical Waveguides. Pergamon, 1960; 300 pp.

2.3:1730 Telecommunications: Devices. (B).

1. G.J.F.Troup, Maser. Methuen-Wiley, 1959; 168 pp.
2. Communications Satellites: Symposium Proceedings. BIS and Academic Press, 1962; 202 pp.
3. D. D. Jones and R. H. Hilbourne, Transistor AF Amplifiers. Iliffe, 1957; 152 pp.
4. J. Brown, Microwave Lenses. Wiley, 1953; 125 pp.

2.3:1730 Telecommunications: Devices (C).

1. H. Schreiber, Radio-transistors: Schemas et caractéristiques. Dunod, 1962; 112 pp.
2. Werner Kleen, Einführung in der Mikrowellentechnik. Hirzel, 1952. Translated by P. A. Lindsay, A. Reddish and C. R. Russell as Electronics of Microwave Tubes. Academic Press, 1958; 349 pp.

2.3:1730(C) (Cont.)

3. Solid State Physics in Electronics and Telecommunications. International Conference, Brussels, 1958. Academic Press. v.1-2, Semiconductors, 1960; 638 + 647 pp. v.3-4, Magnetic and Optical Properties, 1960, 557 + 405 pp.
4. F. Früngel, Impulstechnik: Erzeugung und Anwendung von Kondensatorenladungen. Akademische, 1960; 575 pp.
5. L. Thourel, Emploi des ferrites en hyperfrequence. Dunod, 1962; 110 pp.
6. D. E. Ravalico, Strumenti per il videotecnico. Hoepli. Ed. 2, 1957; 248 pp. (T-V instrumentation).
7. E. Fromy, Mesures en radiotechnique. Dunod. Ed. 3, 1958; 784 pp.
8. F. Vilbig, Nachrichtenübertragung mit Hilfe von Satelliten. Springer, 1962; 176 pp.
9. Werner Herzog, Siebschaltungen mit Schwingkristallen. Vieweg. Ed. 2, 1962; 495 pp.
10. W. Bopp, G. Paul and W. Taeger, Radar: Grundlagen und Anwendungen. Springer, 1962; 288 pp.
11. E. Widl, Fehlerortungen: Ihre Messverfahren in Fernmelde- und Starkstromkabeln. Heidelberg, 1961; 166 pp.
12. A. Guinier, Theorie et technique de la radiocrystallographie. Dunod. Ed. 2, 1956; 750 pp.
13. P. A. Neeteson, Vacuum Valves in Pulse Techniques. Philips and Macmillan. Ed. 2, 1959; 195 pp. (Editions also in French and German).
14. J. Bellander, Televisionsmottagaren: Konstruktion, Verkningsätt, Installation. Stockholm, Ed. 3, 1961; 237 pp.
15. L. Thourel. Antennes. Dunod, 1956; translated by M. de L. Banting as Antenna, Wiley, 1960; 407 pp.
16. Robt. Lepretre, Radar. Gauthier, 1951; 294 pp.; bibliographies.
17. A. Smakula, Einkristalle: Wachstum, Herstellung und Anwendung. Springer, 1962; 431 pp.

2.3:1730 Telecommunications: Devices. (D).

1. Ya. A. Fedotov, editor. Poluprovodnikovye pribory i ikh primenenie.

Soviet Radio, Moscow, 1963; 528 pp. (semiconductors).

- 1a. V. N. Sretenskii, Osnovy primeneniya elektronnych priborov sverkhvysokikh chastot (microwaves). Moscow, 1963; 416 pp.
2. Afroim Z. Fradin, Antenny sverkhvysokikh chastot. Moscow, 1957; 646 pp.
Translated by Morton Nadler as Microwave Antennas, Pergamon, 1961;
668 pp.
3. S. D. Dodik, Poluprovodnikovye stabilizatory postoyannogo napryazheniya i toka. Soviet Radio, Moscow, 1962; 352 pp.
4. A. A. Bokrinskaya and E. T. Skorik, Metody izmereniya moshchnosti v diapazone sverkhvysokikh chastot. Moscow, 1962; 171 pp. (Ultra-high frequencies).
5. S. P. Terent'ev and V. F. Kortavykh, Triodynye peredatchiki detsimetrovykh voln. Kiev, 1962; 346 pp. (Triodes for 10-cm. waves).
6. Proceedings of the Symposium on Electroacoustic Transducers, Krynica, 1958. Polish Academy of Sciences, 1961; 444 pp. (In English).
7. P. Ya. Ufimtsev, Metod kraevykh voln v fizicheskoi teorii diffraktsii. Soviet Radio, Moscow, 1962; 244 pp. (Directional signals).

2.3:1770 Telecommunications: Frequencies; Effects. (A).

1. J. R. Pierce, Symbols, Signals and Noise: Nature and Process of Communication. Harper, 1961; 305 pp.
2. Paul W. Kruse, L. D. McGlauchlin and R. B. McQuistan, Elements of Infrared Technology: Generation, Transmission and Detection. Wiley, 1962; 448 pp.
3. Vladimir K. Zworykin, E. G. Ramberg and L. E. Plory, Television in Science and Industry. Wiley, 1958; 300 pp.
4. August Hund, High Frequency Measurements. McGraw-Hill, Ed. 2, 1951; 676 pp.
5. Handbook of Radiofrequency. Interference. Wheaton, Md., 1962, 4 v. 1. Fundamentals of Electromagnetic Interference. 2. Prediction and Measurement. 3. Interference-Free Design and Interference Suppression. 4. Utilization of the Electromagnetic Spectrum.
6. David A. Bell, Electrical Noise: Fundamentals and Physical Mechanism. Van Nostrand, 1960; 342 pp.
7. Frequency Response Symposium, ASME, 1953 (bibliography through 1952); Trans. ASME 1954; 1145-1393.

2.3:1770(A) (Cont.)

8. John Cowan and H. Kirschbaum, *Introduction to Circuit Analysis*. Merrill, 1960; 312 pp.
9. Irving L. Kosow, *Microwave Theory and Measurements*. Hewlett-Packard Co. and Prentice, 1962; 263 pp.
10. Daniel Levine, *Radargrammetry*. McGraw-Hill, 1960; 330 pp.
11. Moe Wind and H. Rapaport, *Handbook of Microwave Measurements*. Wiley, Ed. 2, 1955; 2 v., 617 pp + 534 charts.

2.3:1770 Telecommunications: Frequencies; Effects. (B).

1. D. J. E. Ingram, *Spectroscopy at Radio and Microwave Frequencies*. Philosophical, 1956; 332 pp.

2.3:1770 Telecommunications: Frequencies; Effects. (C).

1. Spectroscopy and Relaxation at Radio Frequencies: *Proceedings of the 10th Colloque Ampere*. (Leipzig, 1961). Amsterdam, 1962; 531 pp. (Previous Colloques Ampere were published in Archives des sciences).
2. L. Cairo and T. Kahan, *Techniques variationnelles en radioelectrique*. Dunod, 1962; 148 pp.
3. J. Baurand, *Mesures electriques continu a basse frequence*. v. II. *Grandeurs magnetiques; appareils electroniques; mesures diverses*. Dunod, 1962; 306 pp.
4. Otto Zinke, *Hochfrequenz-Messtechnik*. Hirzel. Ed. 3, 1959; 234 pp.
5. A. Fiebranz, *Antennenanlagen für Rundfunk- und Fernsehempfang*. Berlin, 1961; 235 pp.
6. F. du Castel, *Propagation troposphérique, et faisceaux hertziens transhorizons. Telecommunications par satellites*. Dunod, 1962; 512 pp.
7. Helmut Schweitzer, *Messpraxis der UKW Technik: Messverfahren und Messregeln für Praktiker*. Stuttgart, 1962; 129 pp.
8. R. Brault, *Basse frequence et haute fidelite*. Dunod. Ed. 2, 1960; 685 pp.

2.3:1770 Telecommunications: Frequencies; Effects. (D).

1. A. L. Makaelyan, Teoriya i primenenie ferritov na sverkhvysokikh chastotakh. Moscow, 1963; 663 pp. (Ultrahigh frequencies).
2. Lev A. Chernov, Rasprostranenie voln v srede so sluchainymi neodnorodosttryami. Nauk, 1959; translated by R. A. Silverman as Wave Propagation in a Random Medium. McGraw-Hill, 1960, 168 pp.
3. Valerian I. Tatarski, Teoriya fluktiatsionnykh yavlenii. Moscow. Translated by R. A. Silverman as Wave Propagation in a Turbulent Medium. McGraw-Hill, 1961; 285 pp.
4. Aleksandr G. Gurevich, Ferrity na sverkhvysokikh chastotakh. Moscow. 1960; 407 pp. Translated by A. Tybulewicz, as Ferrites at Microwave Frequencies. Consultants, 1963; 329 pp., bibliography.
5. Boris P. Aseev, Fazovye sootnosheniya v radiotekhnike. Moscow, Ed. 2, 1954; 278 pp. Translated as Phasenbeziehungen in der Funktechnik, Verlag Technik, 1957, 267 pp.
6. P. V. Shmakov, editor, Teoriya i praktika tsvetnogo televideniya. Soviet Radio, Moscow, 1962; 662 pp. (Color television).

2.3:1800 Aeronautics and Aviation

1. Robt. W. Truitt, Hypersonic Aerodynamics, Ronald, 1959; 462 pp.
2. Peter C. Sandretto, Electronic Avigation Engineering. I.TelTel, 1958; 772 pp.
3. Michael H. Vavra, Aerothermodynamics and Flow in Turbomachines. Wiley, 1960; 609 pp.
4. C. D. Perkins, editor, Flight Test Manual. AGARD and Pergamon. Ed. 2, 1959; 4 v. I. Performance. II. Stability and Control. III. Instrumentation Catalog. IV. Instrumentation Systems.
5. International Astronautical Congress. IAF and (most years) Springer. Congresses: London, 1951; Stuttgart, 1952; 256 pp.; Zurich, 1953; Innsbruck, 1954, 307 pp.; Copenhagen, 1955; Rome, 1956; Barcelona, 1957, 607 pp.; Amsterdam, 1958, 2 v., 970 pp.; London 1959. 2 v., 946 pp.; Stockholm, 1960, 3 v., 714+202+157 pp.; Washington, 1961, 2 v., 1030 pp.; Varna (Bulgaria), 1962; Paris, 1963.
6. B.H.Goethert, Transonic Wind Tunnel Testing. AGARDograph No. 49, 1961; 397 pp.

7. Coleman duP. Donaldson, Jos. V. Charyk and Martin Summerfield, editors, High Speed Aerodynamics and Jet Propulsion. Princeton. 12 v: 1. F.D.Rossini, editor, Thermodynamics and Physics of Matter, 1955; 832 pp. 2. B.Lewis et al., editors, Combustion Processes, 1956; 678 pp. 3. H.W.Emmons, editor, Fundamentals of Gas Dynamics, 1958; 768 pp. 4. L.Lees and C.C.Lin, editors, Laminar Flows and Transition to Turbulence, in preparation (1963). 5. C.C.Lin, editor, Turbulent Flows and Heat Transfer, 1959; 575 pp. 6. W.R.Sears, editor, General Theory of High Speed Aerodynamics, 1954; 772 pp. 7. H.R.Lawrence and A.F. Donovan, editors, Aerodynamic Components of Aircraft at High Speeds, 1957; 864 pp. 8. A.F.Donovan et al., editors, High Speed Problems of Aircraft; Exp'tal Methods, 1961; 976 pp. 9. R. W. Ladenburg et al., editors, Physical Measurements in Gas Dynamics and Combustion, 1954; 594 pp. 10. W.R.Hawthorne, editor, Aerodynamics of Turbines and Compressors, in preparation, (1963). 11. W.R.Hawthorne and W.T.Olson, editors, Design and Performance of Gas Turbine Power Plants, 1960; 578 pp. 12. O.E.Lancaster, editor, Jet Propulsion Engines, 1959, 970 pp.
8. A. Weinmann, *Flugzeug Elektrotechnik*, Handbuch für Flugzeug-Elektriker. Teil I. Gleichstrom-Bordnetz. Springer, 1961; 237 pp.
9. Robt. C. Dean,Jr., editor, Aerodynamic Measurements. MIT, 1953; 272 pp.
10. J. Chaffois, Aerodynamique de l'avion. v.I. Caracteristiques longitudinales (en regime d'incompressibilite). Dunod, 1962; 246 pp.
11. C. J. Savant,Jr., R.C.Howard and G.B.Solloway, Principles of Inertial Navigation. McGraw-Hill, 1961; 254 pp.
12. Arthur M. Krill, editor, Advances in Hypervelocity Techniques. 2nd Symposium, Denver, 1962. Plenum, 1962; 808 pp. (Hypersonics; wind tunnel tests up to Mach 20).
13. H. Simon, Instrumentenflugkunde und Navigation. I. Grundlagen und Ausbildung in Motor- und Segelflug. (v.8 in Bücher der Luftfahrtpraxis). Springer, 1961; 141 pp.
14. Wm. H. Dorrance, Viscous Hypersonic Flow: Theory of Reacting and Hypersonic Boundary Layers. McGraw-Hill, 1962; 334 pp.
15. Handbook of Supersonic Aerodynamics. Section 18. Shock Tubes. Navord Pub. 1488, v.6. BuWeaps, 1959; 604 pp.
16. R.B.Morrison and M.J.Ingle, editors, Design Data for Aeronautics and Astronautics. A Compilation of Existing Data. Wiley, 1962; 582 pp.

17. Principles of Guided Missiles Design. Van Nostrand, 1955-64. I. A. S.Locke et al., Guidance, 1955; 729 pp. II. E.A.Bonney, M.J. Zucrow and C.W.Besserer, Aerodynamics, Propulsion, Structures and Design Practice, 1956; 595 pp.; III. G. Merrill, H. Goldberg and R.H.Helmholz, Operations Research, Armament, Launching, 1956; 508 pp.; IV. C.W.Besserer, Missile Engineering Handbook, 1958; 600 pp.; V. G. Merrill, Dictionary of Guided Missiles and Spaceflight, 1959; 688 pp.; VI. K.A.Ehricke, Spaceflight, v.1. Environment and Celestial Mechanics, 1960; 528 pp., v.2. Dynamics, 1962, 1210 pp. v.3, Operations, in preparation (1964); VII. J.J.Jerger, Systems Preliminary Design, 1960; 625 pp. VIII. D.J.Povejsil, R.S.Raven and P.Watermann, Airborne Radar, 1961; 823 pp.; IX. R.H.Parvin, Inertial Navigation, 1962; 370 pp.; X. N.S.Potter, Foundations of Search Theory, in preparation (1964); XI. David Newman, Space Vehicle Electronics, 1964; 400 pp. XIII. R.F.Freitag, Range Testing, in preparation (1964); XIII. I. Michelson, G. Merrill and H.O.Hauck, Fundamentals of Guided Missiles, in preparation (1964).

2.3:1830 Space; Rockets; Missiles. (A)

1. Space Trajectories: AAS Symposium. Academic Press, 1960; 298 pp.
2. Allen E. Puckett and Simon Ramo, editors. Guided Missile Engineering. McGraw-Hill, 1959; 487 pp.
3. Homer E. Newell, High Altitude Rocket Research. Academic Press, 1953; 298 pp.
4. Donald P. LeGalley, editor, Ballistic Missile and Space Technology: Fifth Symposium, Los Angeles, 1960: Academic Press. v.1, Bio-astronautics and Electronics, 1961; 494 pp. v. 2, Propulsion and Auxiliary Power Systems, 1960; 442 pp. v. 3, Guidance, Navigation, Tracking and Space Physics, 1960; 450 pp. v. 4, Reentry and Vehicle Design, 1961; 422 pp.
5. Heinz H. Koelle, editor, Handbook of Astronautical Engineering. McGraw-Hill, 1961; 1814 pp.
6. Robt. W. Buchheim, editor, Space Handbook: Astronautics and its Applications. Rand and Random, 1959; 330 pp.
7. Guided Missiles. AF and McGraw-Hill, 1958; 575 pp.
8. Telemetry Transducer Handbook. WADD Tech. Rept. 61-67, 1961; v. 1, 359 pp. and appendix; v. 2, (Catalog); Supplements 1, 2 and 3.
- 8a. J. M. Slater, Inertial Guidance Sensors. Reinhold, 1964; 272 pp.

9. Harry L. Stiltz, editor, Aerospace Telemetry. Prentice-Hall, 1961; 505 pp.
10. Geo. R. Macomber and M. Fernandez, Inertial Guidance Engineering. Prentice-Hall, 1962; 530 pp.
11. Perry A. Borden and W. J. Mayo-Wells, Telemetering Systems. Reinhold, 1959; 349 pp.
12. Jas. L. McKinley and R. D. Bent, Basic Science for Aerospace Vehicles. McGraw-Hill. Ed. 3, 1963; 320 pp.
13. M. J. Zucrow, Aircraft and Missile Propulsion. Wiley, 1958. I. Thermodynamics of Fluid Flow and Application to Propulsion Engines, 538 pp. II. Gas Turbine Power Plant, Turboprop, Turbojet, Ramjet and Rocket Engines, 636 pp.
14. Review of Space Research. NAS-NRC Pub. No. 1079, 1963; 577 pp.
15. Jack N. Nielsen, Missile Aerodynamics. McGraw-Hill, 1960; 450 pp.
16. J. Jensen, G. Townsend and J. Kork. Design Guide to Orbital Flight. McGraw-Hill, 1962; 882 pp.
17. Kenneth Brown and Peter B. Weiser, editors, Ground Support Systems for Missiles and Space Vehicles. McGraw-Hill; 1961; 510 pp.
18. John Humphries, Rockets and Guided Missiles. Macmillan, 1956; 231 pp.
19. Jas. L. McKinley and R. D. Bent, Electricity and Electronics for Aerospace Vehicles. McGraw-Hill, 1961; 392 pp.
20. Eric Burgess, Long-Range Ballistic Missiles. Macmillan, 1961; 255 pp.
21. Connie L. McClure, Theory of Inertial Guidance. Prentice-Hall; 1960; 340 pp.
22. Wolfgang Priester, editor, Space Research: Proceedings of the International Space Science Symposium (3rd, 1962). Wiley, 1963; 1275 pp.
23. Howard S. Seifert, Space Technology, Wiley, 1959; 33 sections.

2.3: 1830 Space; Rockets; Missiles. (B).

1. Kenneth W. Gatland, editor, Spaceflight Technology. BIS Symposium, 1959; Academic Press, 1961; 365 pp.

2. L. J. Carter, Editor, Communications Satellites: Symposium Proceedings. BIS and Academic Press, 1962; 202 pp.

2.3:1830 Space; Rockets; Missiles. (C).

1. J. Carpentier, J. C. Radix, J. Bouvet and G. Bonnevale, Navigation par Inertie. Dunod, 1962; 308 pp.

2.3:1830 Space: Rockets; Missiles. (D).

1. V. I. Feodosiev and Gennadii B. Sinyarev, Vvedenie v raketnuyu tekhniku. Moscow, 1956; 375 pp. Translated by S. N. Sambur-off as Introduction to Rocket Technology. Academic Press, 1959; 344 pp.
2. S. G. Aleksandrov and R. E. Fedorov Sovetskie sputniki i kosmicheskie korabli. Nauk, 1961; 269 pp.

2.3:1900 Physics; Geophysics.

1. Solomon G. Mikhlin, Variatsionnye metody v matematicheskoi fiziki. Moscow, 1957; 476 pp. Translated by Eugen Heyn as Variationsmethoden der mathematischen Physik. Akademie, 1962; 464 pp.
2. John C. Hill, editor. Dutton's Navigation and Piloting. USNI, 1958; 771 pp.
3. Methods of Experimental Physics. Academic Press, 1959-63, in 6 v.:
 1. I. Estermann, Classical Methods, 1959; 596 pp. 2. E. Bleuler and R. O. Haxby, Electronic Methods, 1964; 839 pp. 3. Dudley Williams, Molecular Physics, 1961; 760 pp. 4. V. W. Hughes and H. L. Schultz, Atom and Electron Physics, in preparation, 1964. 5. L. C. L. Yuan and C. S. Wu, Nuclear Physics: Part A, 1961, 734 pp.; Part B, 1963, 886 pp. 6. K. Lark-Horovitz and V. A. Johnson, Solid State Physics, Part A, 1959; 466 pp.; Part B, 1959; 416 pp.
4. Louis N. Ridenour, editor, Modern Physics for the Engineer. McGraw-Hill. I, 1954; 499 pp. II, 1961; 374 pp.
5. Handbook of Geophysics. AF. Macmillan, 1961; 680 pp.
6. Parry H. Moon and D. E. Spencer, Field Theory Handbook. Springer, 1961; 236 pp. (Electric, magnetic, optical, acoustic and gravitational fields).

2.3:1900 (Cont.)

7. Robt. Gomer and C. S. Smith, editors, *Structure and Properties of Solid Surfaces*. Chicago, 1953; 491 pp.
8. Heinz Wittke, *Geodätische Briefe: Ein neuzeitliches Studium des Vermessungstechnik*. Hanseatische. Ed. 3, 1958; 456 pp.
9. Victor Conrad and L. W. Pollak, *Methods in Climatology*. Harvard. Ed. 2, 1950; 459 pp.
10. Georg Hass, editor, *Physics of Thin Films: Advances in Research and Development*. Academic Press, 1963; 350 pp.
11. Jay J. Jakosky, *Exploration Geophysics*. Trija Pub. Co. Ed. 2, 1957; 119⁵ pp.

2.3:2000 Meteorology and Seismology. These topics are separated from other aspects of geophysics merely for convenience.

1. Karl B. Jeffers, editor, *Hydrographic Manual*. CGS. Revised (loose-leaf) edition, 1960-.
2. Jos. J. George, *Weather Forecasting for Aeronautics*. Academic Press, 1960; 673 pp.
3. Chas. H. Dix, *Seismic Prospecting for Oil*. Harper, 1952; 414 pp.
4. Edmond Rothe and J. P. Rothe, *Prospktion Geophysique*. I. Méthode seismique; application; method ionométrique. Gauthier. I, 1950; 438 pp. II. 1952; 714 pp.
5. Jules Aarons, editor, *Radio Astronomical and Satellite Studies of the Atmosphere*. Conference (Corfu Advanced Study Institute) Report. Amsterdam, 1963; 561 pp.
6. Wm. E. K. Middleton and A. F. Spilhaus, *Meteorological Instruments*. Toronto. Ed. 3, 1953; 286 pp.
7. F. Duclaux, *Seismometrie théorique*. Gauthier, 1960; 129 pp.
8. Thos. F. Malone, editor, *Compendium of Meteorology*. AMeS, 1951; 133¹₄ pp.
9. International Meteorological Satellite Workshop. NASA and GPO, 1962; 226 pp.

2.3:2100 Optics: General. (A).

1. Elmer R. Reiter, Meteorologie der Strahlströme (Jet Streams). Springer, 1961; 473 pp.
2. A. Perlat and M. Petit, Mesures en meteorologie. Dunod, 1962; 394 pp.
3. W. Summer, Ultraviolet and Infrared Engineering. Wiley, 1962; 300 pp.
4. Bela A. Lengyel, Lasers: Generation of Light by Stimulated Emission. Wiley, 1962; 125 pp.
5. O. S. Heavens, Optical Properties of Thin Solid Films. Academic Press, 1955; 261 pp.
6. Ernest E. Wahlstrom, Optical Crystallography. Wiley, Ed. 3, 1960; 356 pp.
7. John A. Dean, Flame Photometry. McGraw-Hill, 1960; 354 pp.
8. Wm. D. Wright, Measurement of Color. Macmillan, 1958; 263 pp.
9. G.K.T. Conn and D.G. Avery, Infrared Methods. Academic Press, 1960; 203 pp.
10. Henry L. Hackforth, Infrared Radiation. McGraw-Hill, 1960; 303 pp.
11. H.H. Willard, L.L. Merritt, Jr., and J.A. Dean, Instrumental Methods of Analysis. Van Nostrand, Ed. 3, 1958; 626 pp.
12. IES Lighting Handbook: The Standard Lighting Guide. IES. Ed. 3, 1959; 25 sections.
13. Science of Color. OSA, 1953; 385 pp.
14. Peter Pringsheim, Fluorescence and Phosphorescence. Wiley, 1949; 794 pp.

2.3:2100 Optics: General. (B).

1. Louis C. Martin, Technical Optics. Pitman, v.I, 1948; 350 pp. v.II, Ed. 2, 1950, 398 pp.
2. George Brown, editor, X-Ray Identification and Crystal Structures of Clay Minerals. Mineralogical Society, London, 1961; 544 pp.

2.3:2100(B) (Cont.)

3. John W.T.Walsh, Photometry. Constable, Ed. 3, 1958, 544 pp.
4. Max Born and Emil Wolf, Principles of Optics. Pergamon, 1959, 803 pp.
5. K. J. Habell, editor, Proceedings of the Conference on Optical Instruments and Techniques (London, 1961). Chapman, 1962; 520 pp.
6. W. Summer, Photosensors: Treatise on Photoelectric Devices and Their Application to Industry. Chapman, 1957; 675 pp.
7. F. J. Weinberg, Optics of Flames Including Methods for the Study of Refractive Index Fields in Combustion and Aerodynamics. Butterworth, 1963; 251 pp.
8. Christopher Candler, Modern Interferometers. Hilger, 1951; 502 pp.
9. H.S.Peiser, H.P.Rookaby and A.J.C.Wilson, editors, X-Ray Diffraction by Polycrystalline Materials. IP, 1955; 725 pp.; bibliography.

2.3:2100 Optics: General.(C). The interpretation of optics is not limited to its root meaning (visible light), but includes gamma radiation up to far infrared and even (in electron microscopy) electron diffraction.

1. H. A . E. Keitz, Lichtberechnungen und Lichtmessungen. Philips, 1951; 458 pp. Translated by G. Ducloux as Light Calculations and Measurements. Philips, 1955; 413 pp.
2. P. Görlich, Photoeffekte. I. Historische Entwicklung: Photoemission der Metalle. Akademische, 1962; 165 pp. II. Experimentelle Photoleitung, in preparation, 1963.
3. Optical Transition Probabilities: A Collection of Russian Papers, 1924-60. (Translations). OTS, 1962; 470 pp.
4. D. Curie, Luminescence cristalline. Dunod, 1960; 120 pp.
5. Traité d'optique instrumentale. Dunod. I. A.Marechal and P.Fleury, Imagerie geometrique aberrations; 1952, 244 pp. II. A. Marechal and M. Francon, Diffraction structure des images, influence de la cohérence de la lumiere; 1961; 201 pp.
6. Georg Bauer, Strahlungsmessung im optischen Spektralbereich: Messung elektromagnetischer Strahlung vom Ultraviolet bis zum ultra-rot. Vieweg, 1962; 181 pp.
7. Domenico Argentieri, Ottica Industriale, Milan, Ed. 2, 1954; 466 pp.

2.3:2100(C) (Cont.)

8. R. Herrmann and C.T.J. Alkemade, Flammenphotometrie. Springer. Ed. 2, 1960; 395 pp. bibliography.
9. Helmut Wolf, Spannungsoptik. Springer, 1961; 582 pp.; bibliography, 1814-1959.
10. A.J.C. Wilson, editor, Structure Reports. IUC. Oosthoek, 1954; 643 pp. in 3 v. Supplement, 1960.
11. E. Wolf, editor, Progress in Optics. Amsterdam, v.1, 1961; 342 pp.; v.2, 1963; 298 pp.
12. J. Barraud, Principes de radiocrystallographie. Identification des corps et determination de leur structure par la diffraction des rayons X. Dunod, 1960; 236 pp.
13. Jean J. Trillat, Decouverte de la matiere. A. Michel, 1956; 318 pp. Translated by F.W. Kent as Exploring the Structure of Matter. Wiley, 1959; 214 pp. (Electron optics).
14. Georges A. Boutry, Optique instrumentale. Paris, 1946; 539 pp. Translated by R. Auerbach as Instrumental Optics. Wiley, 1962; 544 pp.
15. Alexander Smakula, Einkristalle: Wachstum, Herstellung und Anwendung. Springer, 1962; 431 pp. (Optical instruments).
16. Ludwig Föppl and Ernst Mönch, Praktische Spannungsoptik. Springer, Ed. 2, 1959; 209 pp.
17. Robert Schroeder, Krystallometrisches Praktikum. Springer, 1950; 199 pp.
18. Allan H. Lyle, ABC's of Lasers and Masers. Sams, 1963; 95 pp.
19. Helmut Naumann, Optik für Konstrukteure. Knapp. Ed. 2, 1960; 328 pp.

2.3:2100 Optics: General. (D).

1. Stepan S. Batsanov, Strukturnaya Refraktometriya. Moscow, 1959. Translated by Paul P. Stratton as Refractometry and Chemical Structure. Consultants, 1961; 250 pp.

2.3:2130 Optics: Spectroscopy.

1. Walter Gordy, Wm. V. Smith and R.F. Trambarulo, Microwave Spectroscopy. Wiley, 1953; 446 pp.

2. Josef Brandmüller and H. Moser, *Einführung in die Ramanspektroskopie*. Darmstadt, 1962; 515 pp.
3. M.E.Haine and V.E.Cosslett, *Electron Microscopy: Present State of the Art*. Interscience, 1961; 289 pp.
4. L. S. Birks, *X-Ray Spectrochemical Analysis*. Interscience, 1959; 114 pp.
5. M. Guy Mellon, editor, *Analytical Absorption Spectroscopy: Absorptimetry and Colorimetry*. Wiley, 1950; 618 pp.
6. Robt. P. Bauman, *Absorption Spectroscopy*. Wiley, 1962; 611 pp.
7. Proceedings of the International Spectroscopy Colloquium (some published as periodical articles). 2nd Pergamon, 1952; 200 pp. 6th, Pergamon, 1957; 663 pp. 10th, Spartan Books, 1963; 806 pp.
8. Pierre Barchewitz, *Spectroscopie infrarouge. I. Vibrations moléculaires*. Gauthier, 1961; 238 pp.
9. Stanley Walker and H. Straw, *Spectroscopy. I. Atomic, Microwave and Radiofrequency Spectroscopy. II. Ultraviolet, Visible, Infrared and Raman Spectroscopy*. Macmillan, 1961-62; 2 v.
10. Advances in Mass Spectrometry: Conference Proceedings. 1st, 1958: Pergamon, 1959; 704 pp. 2nd, 1961: Macmillan, 1963; 628 pp.
11. J. D. Waldron, editor, *Advances in Mass Spectrometry*. Pergamon, 1959; 704 pp.; bibliography (about 2000 references).
12. Harry C. Allen, Jr. and P. C. Cross, *Molecular Vib-Rotors: Theory and Interpretation of High Resolution Infrared Spectra*. Wiley, 1963; 324 pp.
13. M. L. Smith, editor, *Electromagnetically Enriched Isotopes and Mass Spectrometry*. AERE Conference, 1955; Academic Press, 1956; 272 pp.
14. G. P. Barnard, *Modern Mass Spectroscopy*. IP, 1953; 326 pp.; bibliography (about 400 references).
15. Optik und Spektroskopie aller Wellenlängen. (Conference, DDR, 1960). Akademie, 1962; 696 pp.
16. Klaus Biemann, *Mass Spectrometry: Organic Chemical Applications*. McGraw-Hill, 1962; 370 pp.
17. R.W.James, *Optical Principles of the Diffraction of X-Rays*. Bell, 1962; 664 pp.

18. Werner Brügel, Einführung in die Ultrarotspektroskopie. Darmstadt, 1962; 480 pp.
19. Developments in Applied Spectroscopy: Proceedings of the Symposium on Spectroscopy. SAS and Plenum. v.1 (12th Symposium), 1962; 270 pp. v.2 (13th Symposium), 1963, 438 pp. v.3 (14th Symposium), 1963, in preparation, 1964.

2.3:2170 Optics: Microscopy and Electron Microscopy.

1. Michael E. Haine, Electron Microscope: Present State of the Art. Interscience, 1961; 282 pp.
2. Internationale Kongress für Elektronenmikroskopie IV, Berlin, 1958. Springer, 1960. I. Physikalisch-technischer Teil, 851 pp. II. Biologisch-medizinischer Teil, 639 pp.
3. Walter Glaser, Grundlagen der Elektronenoptik. Springer, 1952; 699 pp.
4. O. Klemperer, Electron Optics. Cambridge. Ed. 2, 1953; 471 pp.
5. Electron Microscopy in Anatomy. Symposium, Arnold, 1959; 288 pp.
6. Ludwig Reimer, Elektronenmikroskopische Untersuchungs- und Präparationsmethoden. Springer, 1959; 300 pp.
7. Vernon E. Cosslett and W. C. Nixon, X-Ray Microscopy. Cambridge, 1960; 406 pp.
8. Hugh F. Steedman, Section Cutting in Microscopy. Blackwell, 1960; 172 pp.
9. Geo. L. Clark, editor, Encyclopedia of Microscopy. Reinhold, 1961; 693 pp.
10. B. K. Vainshtein, Difraktsiya rentgenotykh luchei na tsennykh molekulakh. Nauk, 1963; 384 pp. (X-Ray diffraction).
11. Alva H. Bennett, Helen Jupnik, H. Osterburg and O. W. Richards, Phase Microscopy: Principles and Applications. Wiley, 1951; 320 pp.
12. Vladimir K. Zworykin, G. A. Morton, E. G. Ramberg, J. Hillier and A. W. Vance, Electron Optics and the Electron Microscope. Wiley, 1945; 766 pp.
13. S.S. Breese, editor, International Congress for Electron Microscopy, 1962. Academic Press, 1962; 592 + 712 pp.

14. Gareth Thomas, Transmission Electron Microscopy of Metals. Wiley, 1962; 299 pp.
15. Vernon E. Coslett, Practical Electron Microscopy. Academic Press, 1951; 299 pp.
16. Z. G. Pinsker, Difraktsiya elektronov. Moscow, 1949; 404 pp. Translated by J. A. Spink and E. Feigl as Electron Diffraction. Butterworth, 1953; 443 pp.
17. Arne Engstrom, V. E. Coslett and H. H. Pattee, Jr., editors, International Symposium on X-Ray Microscopy and X-Ray Microanalysis (2nd), 1959. Elsevier, 1960; 542 pp. (First Symposium, 1956, same editors. Academic Press, 1957; 645 pp.).
18. C. Magnon, editor, Traite de microscopie electronique. Dunod, 1962; 1300 pp. in 2 v.
19. Robt. B. Fischer, Applied Electron Microscopy. Indiana, 1953; 234 pp.
20. Desmond Kay, editor, Techniques for Electron Microscopy. Blackwell, 1961; 331 pp.
21. Max Haitinger, Fluoreszenzmikroskopie. Akademische. Ed. 2, 1959; 168pp.

2.3:2200 Photography; Photogrammetry.

1. Geo. A. Jones, High Speed Photography. Chapman, 1952; 311 pp.
2. C. E. K. Mees, Theory of the Photographic Process. Macmillan, Ed. 2, 1954; 1133 pp.
3. Hans-Henning Heunert, Praxis der Mikrophotographie. Springer, Ed. 2, 1959; 96 pp.
4. Frederick Purves, editor, Focal Encyclopedia of Photography. Macmillan, 1960; 1298 pp.
5. R. B. Collins, editor, High Speed Photography. Third International Congress, London, 1956; Academic Press, 1957; 417 pp.
6. Kenneth Shaftan and Dean Hawley, Photographic Instrumentation: Techniques, Equipments, Applications. SPIE, 1962; 335 pp.
7. G. Batailler, Chronophotographie electronique: Application a l'etude de phenomenes aerodynamiques evolutifs. Dunod, 1961; 88 pp.
8. Manual of Photogrammetry. ASP. Ed. 2, 1952; 876 pp.

2.3:2200 (Cont.)

9. R. Finstenwalder, Photogrammetrie. deGruyter. Ed. 2, 1952; 377 pp.
10. Kurt Michel, editor, Wissenschaftliche und angewandte Photographie (Handbuch der dropped from title of old edition). Springer, 1955-; 13 v. I. J. Flügge, Photographisches Objektiv, 1955; 414 pp. II. Josef Stüber, Photographische Kamera, 1962; 530pp. III. Harald Weise, Kinematographische Kamera, 1955; 472 pp. IV. H. Wolff, Theorie der photographische Prozesse, in preparation. V. E. Mutter, Technik der Negativ- und Positivverfahren, 1955; 396 pp. VI. Theorie und Praxis der Farbenphotographie, in preparation. VII. Josef Stüber, Stehbildwerfer und Vergrösserungsapparate sowie andere Geräte zur Auswertung der photographischen Aufnahme, in preparation. VIII. Otto Vierling Stereophotographie, in preparation. IX. D. Loemann, Photogrammetrie, in preparation. X. Kurt Michel, Mikrophotographie. Ed. 2, 1962; 734 pp. XI. Theodor Voigt, Reproduktionsphotographie, in preparation. XII. Alfred Grabner, Gestaltung und Perspektiv des photographischen Bildes, in preparation.
11. Wm. G. Hyzer, Engineering and High-Speed Photography. Macmillan, 1962; 536 pp.
12. Kurt Schwidesky, Grundriss der Photogrammetrie. Teubner. Ed. 5, 1954; 282 pp. Translated by John Fosberry as Outline of Photogrammetry, Pitman, 1959; 326 pp.
13. Albert König and Horst Köhler, Fernrohre und Entfernungsmesser. Springer. Ed. 3, 1959; 476 pp.

2.3:2300 Radiation; Radioactivity; Dosimetry.

1. Louis N. Ridenour and Geo. B. Collins, editors, Radiation Laboratory Series. McGraw-Hill for MIT, 1947-48; 1 index volume.
2. Louis N. Ridenour, Radar System Engineering. 748 pp.
3. John S. Hall, Radar Aids to Navigation. 389 pp.
4. Arthur Roberts, Radar Beacons. 489 pp.
5. John A. Pierce, A.A.McKenzie and R.H.Woodward, Loran. 476 pp.
6. George N. Glasoe and J.V.Lebacqz, Pulse Generators. 741 pp.
7. George B. Collins, Microwave Magnetrons. 806 pp.
8. Donald R. Hamilton, Julian K. Knipp and J. B. Horner, Klystrons and Microwave Triodes. 533 pp.

9. Carol G. Montgomery, Robt. H. Dicke and Edward M. Purcell, Principles of Microwave Circuits. 486 pp.
10. George L. Ragan, Microwave Transmission Circuits. 725 pp.
11. Nathan Marcuvitz, Waveguide Handbook. 428 pp.
12. Carol G. Montgomery, Technique of Microwave Measurements. 939 pp. (Translated into Russian, 1949).
13. Samuel Silver, Microwave Antenna Theory and Design. 623 pp.
14. Donald E. Kerr, Propagation of Short Radio Waves. 728 pp.
15. L. D. Smullin and C. G. Montgomery, Microwave Duplexers. 427 pp.
16. H. C. Torrey and C. A. Whitmer, Crystal Rectifiers. 443 pp.
17. Robert V. Pound, Microwave Mixers. 381 pp.
18. John F. Blackburn, Components Handbook. 626 pp.
19. G. E. Valley and H. Wallman, Vacuum Tube Amplifiers. 743 pp.
20. Britton Chance, Waveforms. 785 pp.
21. Britton Chance, Robt. I. Holsizer, Edward F. MacNichol, Jr. and Frederick C. Williams, Electronic Time Measurements. 538 pp.
22. Ivan A. Greenwood, Jr., J. Vance Holdam, Jr., and Duncan MacRae, Jr., Electronic Instruments. 721 pp.
23. Theodore Soller, Merle A. Starr and Geo. E. Valley, Jr., Cathode-Ray Tube Displays. 746 pp.
24. S. N. VanVoorhis, Microwave Receivers. 618 pp.
25. J. L. Lawson and G. E. Uhlenbeck, Threshold Signals. 388 pp.
26. Hubert M. James, N.B.Nichols and Ralph S. Phillips, Theory of Servomechanisms. 375 pp.
27. W. M. Cady, M. B. Karelitz and Louis A. Turner, Radar Scanners and Radomes. 491 pp.
28. Antonin Svoboda, Computing Mechanisms and Linkages. 359 pp. (End of RadLab Series.)
29. August Hund, Short Wave Radiation Phenomena. McGraw-Hill, 1952; 1382 pp. in 2 v.

30. Health and Safety: Dosimetry and Standards. v.21 of Proceedings of the ICPUAE. UN, 1958.
31. Jerome Kohl, R. D. Zentner and H. R. Lukens, Radioisotopes Applications Engineering. Van Nostrand, 1961; 562 pp.
32. H. Fassbender, editor, Einführung in die Messtechnik der Keimstrahlung und die Anwendung der Radioisotope. Thieme, Ed. 2, 1962; 420 pp.
33. Walter Minder, Dosimetrie der Strahlungen radioaktiver Stoffe. Springer, 1961; 300 pp.; bibliography.
34. C. E. Crouthamel, Applied Gamma Ray Spectrometry. Pergamon, 1960; 443 pp.
35. Henry H. Blau, Jr. and Heinz Fischer, editors, Radiative Transfer from Solid Materials. Macmillan, 1962; 257 pp.
36. Kai Siegbahn, Beta Ray and Gamma Ray Spectroscopy. Wiley, 1955; 959 pp.
37. K. Becker, Filmdosimetrie: Grundlagen und Methoden der photographischen Verfahren zur Strahlendosismessung. Springer, 1962; 180 pp.
38. Selected Topics in Radiation Dosimetry. IAEA, 1961; 688 pp.
39. Hanson Blatz, editor, Radiation Hygiene Handbook. McGraw-Hill, 1959; 23 sections.
40. Werner Schwerdtfeger, Elektrische Messtechnik. Winter. Ed. 6 by G. Grasshof, 1958. v.I. Gleichstrommesstechnik. v.II. Wechselstrommesstechnik.
41. Geo. L. Clark, Applied X-Rays. McGraw-Hill. Ed. 4, 1955; 843 pp.
42. Malcolm C. Nokes, Radioactivity Measurement Instruments: Guide to Their Construction and Use. Philosophical, 1958; 75 pp.
43. R.W.M.D'Eye and E. Wait, X-Ray Powder Photography in Inorganic Chemistry. Academic Press, 1960; 222 pp.
44. P. Kolodkine, Conquête de l'energie solaire. Dunod, 1960; 181 pp.
45. G.E.Francis, W.Milligan and A.Wormall. Isotopic Tracers: Theoretical and Practical Manual for Biological Students and Research Workers. Oxford. Ed. 2, 1959; 524 pp.

2.3:2300 (Cont.)

46. V. Kment and A. Kuhn, Technik des Messens radioaktiver Strahlung. Akademische, 1960; 602 pp.
47. Gerald J. Hine and Gordon L. Brownell, editors, Radiation Dosimetry. Academic Press, 1956 (3rd printing 1961), 932 pp.

2.3:2400 Atomic and Nuclear Energy (A). The overlap of atomic energy with radioactivity as subjects may be resolved best by consulting the subject index.

1. John J. Livingood, Principles of Cyclic Particle Accelerators. Van Nostrand, 1961; 400 pp.; bibliography.
2. National Nuclear Energy Series. McGraw-Hill. Titles pertaining to instrumentation:
W.C. Elmore and M. Sands, Electronics: Experimental Techniques, 1949; 413 pp.
A. Guthrie and R.K. Wakerling, Vacuum Equipment and Techniques, 1949; 264 pp.
G.S. Monk and W.H. McCorkle, Optical Instrumentation, 1954, 262 pp.
B.B. Rossi and H.H. Staub, Ionization Chambers and Counters. Experimental Techniques, 1949; 243 pp.
M.C. Ingraham and R.J. Heyden, Handbook of Mass Spectroscopy, 1954, 510 pp.
A. Guthrie and R.H. Wakerling, Characteristics of Electrical Discharges in Magnetic Fields, 1949; 376 pp.
3. D. G. Hughes, Neutron Optics. Wiley, 1954; 136 pp.
4. Emilio Segre, editor, Experimental Nuclear Physics. Wiley. v. 1, 1953; v. 2, 1953; v. 3, 1959; 789 + 600 + 811 pp.
5. A. B. Gillespie, Signal Noise and Resolution in Nuclear Counter Amplifiers. McGraw-Hill, 1953; 155 pp.
6. Transactions of the Joint Nuclear Instrumentation Symposium. IRE, 1961; 164 pp.
7. Robert Bakish, editor, Introduction to Electron Beam Technology. Wiley, 1962; 452 pp.
8. Arthur H. Snell, editor, Nuclear Instruments and Their Uses. Wiley, 1962-63. v. 1, Ionization Detectors, Scintillators, Cerenkov Counters, Amplifiers, Assay, Dosimetry, Health Physics, 494 pp. v. 2, Statistical Treatment of Nuclear Science Data, in preparation, 1964.
9. Samuel Glasstone and Alexander Sesonske, Nuclear Reactor Engineering, AEC and Van Nostrand, 1963; 830 pp.

2.3:2300(A) (Cont.)

10. Ward C. Sangren, Digital Computers and Nuclear Reactor Calculations. Wiley, 1960; 208 pp.
11. Ralph E. Lapp and H. L. Andrews, Nuclear Radiation Physics. Prentice-Hall. Ed. 3, 1963; 448 pp.
12. Robt. V. Meghrebian and D. K. Holmes, Reactor Analysis. McGraw-Hill, 1960; 808 pp.

2.3:2400 Atomic and Nuclear Energy (B).

1. Concise Encyclopedia of Nuclear Energy. Wiley, 1962; 886 pp.
2. M. W. Jervis, Nuclear Reactor Instrumentation. London, 1961; 74 pp.; bibliography.
3. J. B. Birks, editor, Proceedings of the Symposium on Nuclear Instruments, Harwell, 1961. Academic Press, 1962; 252 pp.

2.3:2400 Atomic and Nuclear Energy (C).

1. Proceedings of the International Symposium on Nuclear Electronics. IAEA, 1959; 3 v.; 452 + 378 + 531 pp.
2. International Conference on Ionization Phenomena in Gases. Amsterdam, 1960; 1962: Fourth, Uppsala, 1959; 2 v., 551 + 655 pp. Fifth, Munich, 1961; 2.v.; 1900 pp.
3. V. Raievski, Physique des piles atomiques. Dunod, 1960; 126 pp.
4. Fay Ajzenberg-Selove, Nuclear Spectroscopy. Academic Press, 1960.
 - A. Charged Particles; Gamma Rays; Neutrons; 621 pp.
 - B. Theory; Nuclear Models; 523 pp.
5. Radioisotopes in the Physical Sciences and Industry. Proceedings, Joint Conference, UNESCO, 1962; 554 pp.
6. Hans Kopfermann, Kernmomente. Akademische. Ed. 2, 1956; 462 pp. Translated by E. E. Schneider as Nuclear Moments, Academic Press, 1958; 505 pp.
7. Werner Mialki, Kernverfahrenstechnik. Springer. 1958; 472 pp.

2.3:2400 Atomic and Nuclear Energy (D).

1. Deistvie yadernykh izluchenii na materialy. Nauk, 1962; 383 pp. (Nuclear bombardment).

2.3:2500 Pressure and Vacuum (A).

1. Saul Dushman, Scientific Foundations of Vacuum Technique (new edition revised by J. M. Lafferty). Wiley, 1962; 806 pp.
2. High Pressure Measurement. ASME Symposium, 1953; Trans. ASME, April 1953, and bound separates.
3. Edw. W. Comings, High Pressure Technology. McGraw-Hill, 1956; 297 pp.
4. J. H. Leck, Pressure Measurement in Vacuum Systems. IP, 1957; 144 pp. bibliography.
5. W. G. Brombacher, D. P. Johnson and J. L. Cross, Mercury Barometers and Manometers. NBS Monograph 8, 1960; 59 pp.; bibliography.
6. Vacuum Microbalance Techniques. Signal Corps Conference Proceedings. Plenum. I.(1960), 1961; 170 pp. II(1961), 1962; 191 pp. III (1962), 1963; 200 pp.
7. W. G. Brombacher, Bibliography and Index on Vacuum and Low Pressure Measurement. NBS Monograph 35, 1961; 102 pp.; over 1500 references.
8. J. Yarwood, High Vacuum Technique. Wiley. Ed. 3, 1955; 208 pp.
9. P. W. Bridgman, Physics of High Pressure. Macmillan, 1931; reprinted, with Supplement, 1949; 445 pp.
10. WBAN Manual of Barometry. GPO, 1960.
11. W. G. Brombacher, Measurement of High Pressure: Bibliography, Index, and Preliminary Survey. NBS Rept. 4440, 1955; 120 pp.; about 600 references.
12. Wm. Paul and D. M. Warschauer, editors, Solids Under Pressure. McGraw-Hill, 1963; 478 pp.
13. H. A. Steinherz, Handbook of High Vacuum Engineering. Reinhold, 1963; 368 pp.
14. F. P. Bundy, W.R.Hibbard,Jr., and H.M.Strong, editors. Progress in Very High Pressure Research: Proceedings of the International Conference on High Pressure Research, 1960. Wiley, 1961; 314 pp.
15. Jnanananda(swami), High Vacua: Principles, Production and Measurement. Van Nostrand, 1947; 310 pp.
16. J.L.Cross, Reduction of Data for Piston Gage Pressure Measurements. NBS Monograph 65, 1963; 9 pp.

2.3:2500 Pressure and Vacuum (B).

1. A. L. Reimann, Vacuum Technique. Chapman, 1952; 449 pp.
2. R. H. Wentorf, Modern Very High Pressure Techniques. Butterworth, 1962; 233 pp.
3. M. Pirani and J. Yarwood, Principles of Vacuum Engineering. Chapman, 1961; 533 pp.
4. J. R. Davy, Industrial High Vacuum. Pitman, 1951; 243 pp.
5. A. S. D. Barrett, editor, Progress in Vacuum Science and Technology. Pergamon, 1959; 160 pp.

2.3:2500 Pressure and Vacuum (C).

1. Erwin L. Holland-Merten, Handbuch der Vakuumtechnik: Grundlagen der Vakuumverfahrenstechnik, Anwendungsbereich und Arbeitsweise der Vakuumapparate. Knapp, Ed. 2, 1950; 636 pp.
2. K. Diels and R. Jaeckel, editors, Leybold Vakuum Taschenbuch. Ed. 2, 1962; 366 pp.; bibliography.
3. Guenther Mönch, Neues und bewährtes aus der Hochvakuumtechnik. Lange-Springer, 1961; 1024 pp.
4. S. Buch, Einführung in die allgemeine Vakuumtechnik. Springer, 1962; 207 pp.
5. Wolfgang Pupp. Vakuumtechnik. Munich. v. I, Grundlagen, 1962; 111pp. v. 2. Anwendung, in preparation (1963).
6. Max Auwaerter, editor, Ergebnisse der Hochvakuumtechnik und der Physik dünner Schichten. Stuttgart, 1957; 282 pp.
7. Max Morand, editor, Traité pratique de technique du vide. Eyrolles, 1961; 366 pp.; bibliography.
8. Rudolf Jaeckel, Kleinste Drucke: Ihre Messung und Erzeugung. Springer, 1950; 302 pp.; translated into Russian, 1952; Ed. 2 in preparation, 1963.
9. Werner Espe, Werkstoffkunde der Hochvakuumtechnik. Berlin. I. Metalle und metallisch leitende Werkstoffe, 1959. VIII. Hilfswerkstoffe, 1961; 542 pp. (Other parts, no data. The original 1-volume edition, 1936, was translated into Czech).

10. Erwin L. Holland-Merten, Vakuum-Pumpen in der Verfahrenstechnik. Knapp, 1951; 166 pp.
- 2.3:2600 Acoustics and Ultrasonics. In this guide and its index, ultrasonics and hypersonics are not synonyms. The distinction, as applied, rests on a shaky etymological foundation, but usage can be cited. Ultrasonics means acoustic vibration outside the audible range; hypersonics means fluid flow at speeds above Mach 1.
1. Lawrence E. Kinsler and Austin R. Frey, Fundamentals of Acoustics. Wiley. Ed. 2, 1962; 524 pp.
 2. Theodore F. Hueter and R. H. Bolt, Sonics: Techniques for the Use of Sound and Ultrasonics in Engineering and Science. Wiley, 1955, 456 pp.
 3. Warren P. Mason, Piezoelectric Crystals and Their Applications to Ultrasonics. Van Nostrand, 1956; 528 pp.
 4. Richard Goldman, Ultrasonic Technology. Reinhold, 1962; 304 pp.
 5. Edw. G. Richardson, Ultrasonic Physics. Elsevier. Ed. 2, by A. E. Brown, 1962; 313 pp.
 6. Alan E. Crawford, Ultrasonic Engineering with Particular Reference to High Power Applications. Academic Press, 1955; 344 pp.
 7. Eugen Skudrzyk, Grundlagen der Akustik. Springer, 1954; 1084 pp.
 8. Leo L. Beranek, Noise Reduction. McGraw-Hill, 1960; 752 pp.
 9. S. B. Stopskii, Analizatory spektra zvukovykh i infrazvukovykh chastot dlya akusticheskoi spektrometrii. Moscow, 1962; 136 pp.
 10. Oleg I. Babikov, Ul'trazvuk i ego primenenie v promyshlennosti. Moscow, 1958; 260 pp. Translated as Ultrasonics and its Industrial Applications, Consultants Bureau, 1960; 224 pp.
 11. Ferdinand Trendelenburg, Einführung in die Akustik. Springer. Ed. 3, 1961; 551 pp.
 12. Vernon M. Albers, editor, Underwater Acoustics. Plenum, 1963; 368 pp.
 13. R. J. Volluz, Handbook of Supersonic Aerodynamics. Section 20: Wind Tunnel Instrumentation and Operation. Navord Rept. 1488, v.6; APL and GPO, 1961; 485 pp.
 - 13a. L. Guiyesse and P. Sabathe, Acoustique sous-marine. Dunod, 1964.

2.3:2600 (Cont.)

14. Leo L. Beranek, *Acoustic Measurements*. Wiley, 1949; 914 pp.
15. D. A. Snel, *Enregistrement magnetique du son: Theorie et pratique de l'enregistrement et de la reproduction*. Dunod, 1961; 210 pp.
16. Ludwig Bergmann, *Ultraschall und seine Anwendung in Wissenschaft und Technik*. Hirzel. Ed. 6, 1954; 1114 pp.; supplement brings bibliography to 1957. Ed. 3 translated by Christa A. Painter as *Ultrasonics and Their Scientific and Technical Applications*. BuShips, 1949; 608 pp.
17. Werner Schaffs, *Molekularakustik: Eine Einführung in die Zusammenhänge zwischen Ultraschall und Molekülstruktur in Flüssigkeiten und Gasen*. Springer, 1963; 350 pp.
18. L. Cremer, editor, *Proceedings of the Third International Congress on Acoustics*, 1959. Elsevier, 1962; 2 v. 604 + 716 pp. Bibliography. *Fourth Congress*: A. K. Nielsen, editor, 1962; 10 sections.
19. E. G. Richardson, editor, *Technical Aspects of Sound*. Elsevier, v.I, 1953 (reprinted 1961); 544 pp. V.II, 1957; 412 pp. v.III, 1962; 250 pp.
20. Jos. W. Horton, *Fundamentals of Sonar*, USNI. Ed. 2, 1959; 417 pp.
21. Josef Krautkrämer and Herbert Krautkrämer, *Werkstoffprüfung mit Ultraschall*. Springer, 1961; 501 pp.
22. Fred'k V. Hunt, *Electroacoustics*. Harvard and Wiley, 1954; 260 pp.

2.3:2700 Chronometry; Horology.

1. Britton Chance, editor, *Electronic Time Measurements*. McGraw-Hill, 1949; 538 pp.
2. Ian A.D. Lewis and F. H. Wells, *Millimicrosecond Pulse Techniques*. McGraw-Hill, 1954; 310 pp.
3. Friedrich Asmuss, *Technische Laufwerke, einschliesslich Uhren*. Springer, 1958; 279 pp.
4. Fred'k J. Britten, *Watch and Clock Maker's Handbook, Dictionary and Guide*. Van Nostrand. Ed. 15, 1955; 598 pp.

2.3:2800 Heat; Temperature; Cryoscopy. (A). Temperature measurement over the entire known range is included. In temperature control there is some overlap with 2.3:1370, Process Control. The word cryoscopy is not rigidly interpreted; here it means from 0°K. to about liquid air temperature.

1. David K.C. MacDonald, Thermoelectricity: Introduction to the Principles. Wiley, 1962; 133 pp.
2. J. K. Roberts, Heat and Thermodynamics. Wiley. Ed. 5 by A. R. Miller 1960; 613 pp.
3. W. D. Kingery, Property Measurements at High Temperatures. Wiley, 1959; 416 pp.
4. John A. Jamieson, G. N. Plass, R. H. McFree, R. H. Grube and R. G. Richards, Infrared Physics and Engineering. McGraw-Hill, 1963; 673 pp.
5. H. Dean Baker, E. A. Ryder and N. H. Baker, Temperature Measurements in Engineering. Wiley, v.1, 1953; 179 pp. v.2, 1961, 510 pp.
6. Chas. M. Herzfeld, editor, Temperature: Its Measurement and Control in Science and Industry: Fourth Symposium. Reinhold (AIP, ISA and NBS); 3 v. I. Basic Concepts, Standards and Methods, 1962; 848 pp. II. Applied Methods and Instruments, 1962; 1108 pp. III. Biology and Medicine, 1963; 683 pp.
7. Bruno A. Boley and Jerome H. Weiner, Theory of Thermal Stresses. Wiley, 1960; 586 pp.
8. G. W. Geil, editor, Mechanical Properties of Metals at Low Temperatures. NBS Circular 520, 1952; 206 pp.
9. Robt. W. Vance and W. M. Duke, editors, Applied Cryogenic Engineering. Wiley, 1962; 510 pp.
10. A. I. Emel'ianov, Teplotekhnicheskie kontrol'no-izmeritel'nye i reguliruyushchie pribory. Moscow, 1963; 238 pp. (Process control).
11. John W. Bremer, Superconductive Devices. McGraw-Hill, 1962; 183 pp.
12. Jas. L. Threlkeld, Thermal Environmental Engineering. Prentice-Hall, 1962; 514 pp.
13. Thos. R. Harrison, Radiation Pyrometry and its Underlying Principles of Radiant Heat Transfer. Wiley, 1960; 234 pp.
14. M. Tanenbaum and W. V. Wright, Superconductors. AIMMPE and Wiley, 1962; 149 pp.

2.3:2800(A) (Cont.)

15. Leonard C. Jackson, Low Temperature Physics. Wiley. Ed. 5, 1962; 158 pp.
16. Frederick D. Rossini and H. A. Skinner, editors, Experimental Thermochemistry: Measurement of Heats of Reaction. IUPAC and Wiley. v. 1, 1956, 342 pp.; v. 2, 1962, 488 pp.
17. W. D. Kingery, editor, Kinetics of High Temperature Processes: MIT Conference, 1958. MIT, 1959; Wiley, 1959; 326 pp.
18. Frederick D. Rossini, Chemical Thermodynamics. Wiley, 1950; 514 pp. (calorimetry).

2.3:2800 Heat; Temperature; Cryoscopy (B).

1. Claudio G. Hyde, Gas Calorimetry: Determination of the Calorific Value of Gaseous Fuels. Benn, 1960; 456 pp.
2. Copper in Instrumentation. Copper Development Assocn. Pub. No. 48, London, 1953; 152 pp.
3. Robt. Royds, Measurement and Control of Temperatures in Industry. Constable, 1951; 260 pp.
4. J. O'M. Bockris, J. L. White and J. D. Mackenzie, Physicochemical Measurements at High Temperatures. Butterworth, 1959; 394 pp.
5. Bernard Lewis and Guenther von Elbe, Combustion, Flames and Explosions of Gases. Academic Press. Ed. 2, 1961; 731 pp.
6. A. G. Gaydon and H. G. Wolfhard, Flames: Their Structure, Radiation and Temperature. Macmillan. Ed. 2, 1960; 383 pp.
7. Frank E. Hoare et al., editors, Experimental Cryophysics. Butterworth, 1961; 400 pp.

2.3:2800 Heat; Temperature; Cryoscopy. (C).

1. Y. Doucet, Techniques modernes et applications de la cryometrie. Dunod, 1959; 236 pp.
2. H. Lindorf, Technische Temperaturmessungen. Girardet, Ed. 2, 1956; 243 pp.
3. H. D. Baehr and K. Schwier, Thermodynamische Eigenschaften der Luft im Temperaturbereich zwischen -210°C and +1250°C bis zu Drücken von 4500 bar. Springer, 1961; 136 pp.

4. Michel Terny, Mesure des temperatures au laboratoire et dans l'industrie. Dunod, 1962; 319 pp.
5. Applications thermiques de l'energie solaire dans la domaine de la recherche et de l'industrie. CNRS. 1961; 738 pp.; bibliography.
6. Alfred Schack, Industrielle Wärmeübergang für Praxis und Studium. Dusseldorf. Ed. 6, 1962; 443 pp.
7. Edouard Calvet, Microcalorimetrie: Applications physicochimiques et biologiques. Masson, 1956; 395 pp.
8. H. Laporte, Messung, Erzeugung und Konstanthaltung hoher bis tiefer Temperaturen. Springer, 1961; 268 pp.
9. F. Henning, Temperaturmessung. Leipzig. Ed. 2, 1955; 304 pp.

2.3:2900 Mechanics. (A). Applied physics, engineering and mechanics have complex interrelations, all in turn related to the "mother of all sciences", mathematics. No fine distinctions are drawn in this classified arrangement; the subject index should be consulted.

1. Cornelius Lanczos, Linear Differential Operators. Van Nostrand, 1961; 580 pp.; bibliography.
2. Harry F. Olson, Dynamical Analogies. Van Nostrand, Ed. 2, 1958; 278 pp.
3. Franklin D. Jones and H. L. Horton, editors, Ingenious Mechanisms for Designers and Inventors. Industrial. I(1930), 536 pp.; II (1936), 538 pp.; III(1951), 536 pp.
4. Proceedings of the U. S. National Congress of Applied Mechanics. ASME. 1st-2nd (1951,1954), 1954; 3rd, 1958; 4th, 1962.
5. Hydrodynamic Instability: Symposia in Applied Mathematics. AMS, 1962; 319 pp.
6. James B. Scarborough, Gyroscope: Theory and Applications. Interscience, 1958; 257 pp.
7. John E. Dorn, editor, Mechanical Behavior of Materials at Elevated Temperatures. McGraw-Hill, 1961; 529 pp.
8. Jos. E. Shigley. Theory of Machines. I. Kinematic Analysis of Mechanisms. II. Dynamic Analysis of Machines. McGraw-Hill, 1961; 682 pp.

9. John W. Dettman, Mathematical Methods in Physics and Engineering. McGraw-Hill, 1962; 323 pp.
10. John E. Younger, Advanced Dynamics. Ronald, 1958; 285 pp.
11. Ali B. Cambel, Thos. P. Anderson and M. N. Slawsky, editors, Magnetohydrodynamics: Fourth Biennial Gas Dynamics Symposium. Northwestern, 1962; 393 pp.
12. Chas. F. Shoop and Geo. L. Tuve, Mechanical Engineering Practice: A Laboratory Reference Text. McGraw-Hill. Ed. 5, 1956; 471 pp.
13. Joaquin B. Diaz and S. I. Pai, Fluid Dynamics and Applied Mathematics: Symposium Proceedings. Gordon, 1962; 207 pp.
14. Fred B. Seely and Jas. O. Smith, Advanced Mechanics of Materials. Wiley, Ed. 2, 1952; 680 pp.
15. Vernon L. Doughtie and Walter H. James, Elements of Mechanism. Wiley, 1954; 494 pp.
16. Hunter Rouse, editor, Advanced Mechanics of Fluids. Wiley, 1959; 444 pp.
17. John C. Jaeger, Elasticity, Fracture and Flow. Wiley, Ed. 2, 1962; 208 pp.
18. Shih-I Pai, Magnetogas Dynamics and Plasma Dynamics. Prentice-Hall, 1962; 197 pp.
19. Herman E. Koenig and Wm. A. Blackwell, Electromechanical System Theory. McGraw-Hill, 1961; 518 pp.
20. Constantine A. Neugebauer, J. B. Newkirk and D. A. Vermilyea, editors. Structure and Properties of Thin Films. International Conference, 1959; Wiley, 1959; 561 pp.
21. Arpad Nadai, Theory of Flow and Fracture of Solids. McGraw-Hill, 1962; 2. v.; 572 + 705 pp.

2.3:2900 Mechanics. (B).

1. Jos. M. Dalla Valle, Micromeritics: Technology of Fine Particles. Pitman. Ed. 2, 1953; 555 pp.
2. S. A. Couling, Industrial and Marine Gearing. Wiley, 1962; 236 pp.
3. K.I.T.Richardson, Gyroscope Applied. PL, 1954; 384 pp.

2.3:2900(B) (Cont.)

4. Ronald N. Arnold and Leonard Mauder, Gyrodynamics and its Engineering Applications. Academic Press. 1961; 484 pp.
5. David K.C. MacDonald, Introductory Statistical Mechanics for Physicists. Wiley, 1963; 176 pp.

2.3:2900 Mechanics. (C).

1. J. Legal and J. Cliton, Dynamique du point et des systemes materiels. Dunod, 1962; 362 pp.
2. D. Kastler, Introduction a l'electrodynamique quantique. Dunod, 1961; 334 pp.
3. A. Messiah, Mecanique quantique. Dunod. v.1. Formalisme et son interpretation, 1959; 430 pp.; reprinted 1962. v.2, Symetries et invariance, 1960; 544 pp.
4. M. Guillon, Etude et determination des systemes hydrauliques. Dunod. 1961; 444 pp.
5. R. Ouziaux and J. Perrier, Mecanique appliquee. Dunod. v. I. Mecanique des fluides. 1958. 466 pp. v. II. Thermodynamique. 1958. 122 pp. v. III. Dynamique des machines alternatives, pompes et compresseurs volumetriques. 1962. 248 pp. v. IV. Turbomachines. In preparation, 1964.
6. W. Flügge, Stresses in Shells. Springer. 2nd Printing, 1962; 499 pp.
7. G. Ramat, Manuel du mecanicien. II. Theorie du moteur. Dunod, 1962; v.1, 316 pp.; v.2, 428 pp.
8. R. Comolet, Mecanique experimentale des fluides. v.I. Statique et dynamique des fluides nonvisqueux. Dunod, 1961; 244 pp.
9. H. Schiott, Hydraulik. SMF. Stockholm, 1961; 249 pp.
10. E. Broschat, Statik starrer Körper. Lange-Springer. Ed. 2, 1962; 76 pp.
11. Otto Richter and Richard von Voss, Bauelemente der Feinmechanik. Verlag Technik. Ed. 8, 1959; 551 pp.
12. J. Faisandier, Mecanismes hydrauliques. Dunod. Ed. 2, 1962; 336 pp.
13. Herman Pöschl, Verbindungselemente der Feinwerktechnik. Springer, 1954; 108 pp.

14. Richard Grammel, Kreisel: Seine Theorie und seine Anwendungen. Springer. Ed. 2, 1950; I. Theorie, 281 pp. II. Anwendungen, 268 pp. (Gyroscopes)
15. Dietrich Morgenstern and I. Szabo, Vorlesungen über theoretische Mechanik. Springer, 1961; 374 pp.
16. H. Haeder, Konstruieren und Rechnen. I. Maschinenelemente, Festigkeitslehre und Mechanik für den Maschinenbau. Berlin. Ed. 20/21, 1962; 1241 pp.
17. Mecanique des fluides et la magnetohydrodynamique. Symposium, Societe Hydrotechnique de France, 1961. Dunod, 1962; 168 pp.
18. Hans Kauderer, Nichtlineare Mechanik. Springer, 1958; 684 pp.
19. Rudolf Klingler, Messen und Prüfen im Maschinenbau. Zurich, 1951; 487 pp.

2.3:2900 Mechanics (D).

1. V. V. Novozhilov, Teoriya uprugosti. Leningrad, 1958; 369 pp. Translated by J. J. Shorr-Kon as Theory of Elasticity. OTS, 1961; 323 pp.
2. Leonid I. Sedov, Metody podobiya i razmernosti v mehanike. Moscow. Ed. 4, 1957; 375 pp. Translated by Morris Friedman as Similarity and Dimensional Methods in Mechanics. Academic Press, 1959, 363 pp.
3. A. L. Gol'denveizer, Teoriya uprugykh tonkikh obolochek. Moscow, 1953; 544 pp. Translated as Theory of Elastic Thin Shells. Pergamon, 1961; 658 pp.
4. National Congress for Applied Mechanics. (Japan). Tokyo. Annual, 1951--.

2.3:3000 Fluid Flow (A). Since fluids may be either gases or liquids, the aerodynamic aspects of 2.3:1800, Aerospace Sciences, have much in common with this section.

1. Jos. Hilsenrath, Chas. W. Beckett, Wm. S. Benedict et al., Tables of the Thermodynamic and Transport Properties of Air, Argon, Carbon Dioxide, Carbon Monoxide, Hydrogen, Nitrogen, Oxygen and Steam. NBS Circular 564, 1955; 488 pp.
2. Flowmeter Computation Handbook. ASME, 1961.

3. Rarefied Gas Dynamics: International Symposium. Academic Press. 2nd, 1960; L. Talbot, editor. 1961; 748 pp. 3rd, 1962: J. A. Laurmann, editor. 1963; 2 v., 525 + 375 pp. (1st and 2nd Supplements to Advances in Applied Mechanics).
4. Markus Reiner, Lectures on Theoretical Rheology. Interscience, 1960; 174 pp.
5. Ascher H. Shapiro, Dynamics and Thermodynamics of Compressible Fluid Flow. Ronald, 1953-1954; 2 v., 647 + 537 pp.
6. Wm. H. Corcoran, J. B. Oppell and B. M. Sage, Momentum Transfer in Fluids. Academic Press, 1956; 394 pp.
7. Reid F. Stearns, R. M. Jackson, R. R. Johnson and C. A. Larson, Flow Measurement With Orifice Meters. Van Nostrand, 1951; 384 pp.
8. Garrett Birkhoff and E. H. Zarantonello, Jets, Wakes and Cavities. Academic Press, 1957; 353 pp.
9. Richard von Mises, Mathematical Theory of Compressible Fluid Flow. Academic Press, 1958; 514 pp.
10. Advances in Hypervelocity Techniques: 2nd Symposium, 1962; Plenum. 1962; 795 pp.
11. Robt. W. Truitt, Hypersonic Aerodynamics. Ronald, 1959; 462 pp.
12. John F. Blackburn, Gerhard Reethof and J. L. Shearer, Fluid Power Control. Wiley, 1960; 710 pp.
13. Leland K. Spink, Principles and Practice of Flowmeter Engineering. Ed. 8, 1958; 549 pp. Foxboro Co., Foxboro, Mass.
14. Salamon Eskinazi, Principles of Fluid Mechanics. Allyn, 1962; 478 pp.
15. Geo. Rudingher, Wave Diagrams for Nonsteady Flow in Ducts. Van Nostrand, 1955; 278 pp.
16. Wallace D. Hayes and R. F. Probstein, Hypersonic Flow Theory, Academic Press, 1959; 464 pp.
17. Markus Reiner, Deformation, Strain and Flow: Elementary Introduction to Rheology. Interscience, 1960; 363 pp.
18. Cecil T. Lane, Superfluid Physics. McGraw-Hill, 1962; 226 pp.

2.3:3000 Fluid Flow (B).

1. Hypersonic Flow: 11th Symposium, 1959, Academic Press, 1960; 432 pp.
2. Ludwig Prandtl, Essentials of Fluid Dynamics with Applications to Hydraulics, Aeronautics, Meteorology, and Other Subjects. Hafner, 1952; 452 pp.
3. Hugh G. Conway, Fluid Pressure Mechanisms. Pitman. Ed. 2, 1958; 235 pp.
4. V. G. W. Harrison, editor, International Congress on Rheology (2nd 1953). Academic Press, 1954; 451 pp.

2.3:3000 Fluid Flow (C).

1. C. R. Himmller, Commande hydraulique. Dunod. Ed. 2, 1960; 432 pp.
2. Klaus Oswatitsch, Gasdynamik. Springer, 1952; 456 pp. Translated by Gustav Kuerti, Gas Dynamics. Academic Press, 1956; 610 pp.
3. B. Persoz, Introduction a l'etude de la rheologie. Dunod, 1960; 251 pp.
4. Caius Jacob, Introduction mathematique a la mecanique des fluides. Gauthier, 1959; 1286 pp.

2.3:3000 Fluid Flow (D).

1. Gorimir G. Chernyi, Techeniya gaza s bol'shoi sverkhzvukovoi skorost'yu. Moscow, 1959; 220 pp. Translated by Ronald F. Robstein as Introduction to Hypersonic Flow. Academic Press, 1961; 262 pp.
2. Adam T. Troskolancki, Hydromechanika techniczna: Pomiary wodne. Warsaw, 1959. Translated by J. Bertholdi et al. as Hydrometry: Theory and Practice of Hydraulic Measurements, Pergamon, 1961; 684 pp. Also by M. Laronde as Theorie et pratique des mesures hydrauliques, Dunod, 1963; 820 pp.
3. Leonid M. Brekhovskikh, Volny v sloistykh sredakh. Nauk, 1957; 501pp. Translation by David Liebermann, Waves in Layered Media. Academic Press, 1960; 561 pp.

2.3:3100 Vibration and Shock.

1. J. Gonda, Kmitanie pruznych telies. Bratislav, 1960; 408 pp. (Vibration).
2. Erhard Hübner, Technische Schwingungslehre in ihren Grundzügen. Springer, 1957; 322 pp.
3. A. Fouille, Physique des vibrations a l'usage des ingenieurs. Dunod. Ed. 2, 1960; 600 pp.
4. J. J. Stoker, Nonlinear Vibrations in Mechanical and Electrical Systems. Wiley, 1950; 273 pp.
5. Chas. E. Crede, Vibration and Shock Isolation. Wiley, 1951; 328 pp.
6. Kin N. Tong, Theory of Mechanical Vibration. Wiley, 1960; 348 pp.
7. Paul A. Crafton, Shock and Vibration in Linear Systems. Harper, 1961; 415 pp.
8. Stephen Timoshenko, Vibration Problems in Engineering. Van Nostrand. Ed. 3, 1955; 468 pp.
9. Stephen H. Crandall, Random Vibration. MIT and Wiley, 1958; 423 pp.
10. David L. Thornton, Mechanics Applied to Vibrations and Balancing. Chapman. Ed. 2, 1952; 584 pp.
11. Jacob P. Den Hartog, Mechanical Vibrations. McGraw-Hill, Ed. 4, 1956; 436 pp.
12. Nicholas Minorsky, Nonlinear Oscillations. Macmillan, 1962; 710 pp.
13. Cyril M. Harris and C. E. Crede, Shock and Vibration Handbook. McGraw-Hill, 1961, in 3 v. I. Basic Theory and Measurements, 760 pp. II. Data Analysis, Testing, and Methods of Control, 659 pp. III. Engineering Design and Environmental Conditions, 608 pp.

2.3:3200 Chemistry: Analysis; Processes. (A). Instrumental analysis, crowding out the old classic methods, often trades away glamor for speed, but often also contributes a fresh new glamor. Automatic control panels are replacing the foremen who knew by sight, taste or smell when to turn a valve. Chemical instrumentation has a lively new literature and a high obsolescence rate.

1. Stephen Dal Nogare and R. S. Juvet, Gas-Liquid Chromatography. Interscience, 1962; 450 pp.

2. International Symposium on Gas Chromatography (I, II and III). ISA and Academic Press. I(1958), 323 pp. II(1959), 463 pp. III (1962), 719 pp. Bibliographies.
3. John H. Harley and Stephen E. Wiberly, Instrumental Analysis. Wiley, 1954; 440 pp.
4. Allen L. Chaplin, Applications of Industrial pH Controls. Instruments, 1950; 144 pp.
5. Mass Spectrometry in Physics Research. Symposium. NBS Circular 522, 1953; 273 pp.
6. Harold G. Cassidy, Fundamentals of Chromatography. Wiley, 1957; 447 pp.; bibliography (1042 references).
7. Chas. N. Reilley, editor, Advances in Analytical Chemistry and Instrumentation. Wiley, v.I, 1960; 454 pp. v. II, 1963; 408 pp.
8. David F. Boltz, Selected Topics in Modern Instrumental Analysis. Prentice-Hall, 1952; 477 pp.
9. E. R. Riegel, Chemical Process Machinery. Reinhold. Ed. 2, 1953; 743 pp.
10. W. G. Berl, editor, Physical Methods in Chemical Analysis. Academic Press. v.1, Ed. 2, 1960, 686 pp. v.2, Ed. 2, (in preparation, 1964). v.3, Ed. 1, 1956, 652 pp. v.4, Ed. 1, 1961, 476 pp.
11. Foster D. and Cornelia T. Snell, Colorimetric Methods of Chemical Analysis. Van Nostrand. Ed. 3, 1948-1961. v.1, 1948. Theory, Instruments pH, 239 pp. v.2, 1949. Inorganic Determinations, 916 pp. v.2A, 1959. Including Photometric Methods, 804 pp. v.3, 1953. Organic Compounds I; 576 pp. v.3A, 1961. Colorimetric Methods of Analysis; 576 pp. v.4, 1954. Organic Compounds II; 676 pp.
12. Edw. J. Bair, Introduction to Chemical Instrumentation: Electronic Signals and Operations. McGraw-Hill, 1962; 349 pp.
13. T. J. Williams and V. A. Lauher, Automatic Control of Chemical and Petroleum Processes. Gulf, 1961; 350 pp.
14. Louis H. Ahrens and S. R. Taylor, Spectrochemical Analysis. Addison. Ed. 2, 1961; 454 pp.
15. Arnold Weissberger, editor, Physical Methods of Organic Chemistry. Academic Press. Ed. 3, 1959-60, 4 v.; 930 + 938 + 870 + 984 pp.

16. Roger G. Bates, Electrometric pH Determinations: Theory and Practice. Wiley, 1954; 331 pp.
17. Pierce W. Selwood, Magnetochemistry. Wiley. Ed. 2, 1956; 447 pp.
18. Frank M. Biffen and Wm. Seaman, Modern Instruments in Chemical Analysis. McGraw-Hill, 1956; 333 pp.
19. Jos. Reilly and Wm. N. Rae, Physicochemical Methods. Van Nostrand. Ed. 5, 1954: v.1, Measurement and Manipulation, 760 pp. v.2, Practical Measurements, 800 pp. v. 3, Supplement, 690 pp.
20. Wm. H. Butz and H. J. Noebek, editors, Instrumental Methods for the Analysis of Food Additives. Symposium, 1960. Wiley, 1961; 288 pp.
21. Howard Purnell, Gas Chromatography. Wiley, 1962; 441 pp.
22. Emile M. Chamot and Clyde W. Mason, Handbook of Chemical Microscopy. Wiley. v. I, Principles and Use of Microscopes and Accessories. Ed. 3, 1958; 502 pp. v. II, Chemical Methods and Inorganic Qualitative Analysis. Ed. 2, 1940; 438 pp.
23. Izaak M. Kolthoff and J. J. Lingane, Polarography. Wiley. Ed. 2, 1952. I. Theoretical Principles, Instrumentation and Technique, 438 pp. II. Inorganic and Organic Polarography, 568 pp.
24. John R. Collins, Electrochemical Measuring Instruments. Rider, 1962; 128 pp.
25. Erich Heftmann, editor, Chromatography: Adsorption, Partition, Ion Exchange, Electrochromatography: Column, Slab, Paper, Gas. Reinhold, 1961; 753 pp.
26. Paul Delahay, New Instrumental Methods in Electrochemistry: Theory, Instrumentation and Applications to Analytical and Physical Chemistry. Interscience, 1954; 455 pp.

2.3:3200 Chemistry: Analysis; Processes. (B).

1. International Symposium on Combustion (7th and 9th). Academic Press, 1959; 959 pp.; and 1962; 975 pp. (Instrumentation topics included).
2. Ivor Smith, editor, Chromatographic and Electrophoretic Techniques. London, 1960; 2 v. (v.1 is Ed. 2 of Chromatographic Techniques).
3. J. P. Phillips, Automatic Titrators. Academic Press, 1959; 225 pp.

2.3:3200(B) (Cont.)

4. Milan Bier, editor, *Electrophoresis: Theory, Methods and Applications.* Academic Press, 1959; 563 pp.
5. Richard C. L. Bosworth, *Physics in Chemical Industry.* Macmillan, 1950; 928 pp. (In 4 parts; Part IV, 9 chapters, is on Scientific Instruments).

2.3:3200 Chemistry: Analysis; Processes. (C).

1. F. Hecht and M. K. Zacherl, editors, *Handbuch der mikrochemischen Methoden.* Springer. Vol. I, Pt. 1, *Organisch-präparative Methoden*, 1954; 236 pp. Vol. I, Pt. 2, *Waagen und Geräte*, 1959; 307 pp. Vol. II, *Verwendung der Radioaktivität*, 1955; 423 pp. Vol. III, *Anorganisch-chromatographische Methoden*, 1961, 225 pp.
2. Heinz Ewald and Heinrich Hintenberger, *Methoden und Anwendungen der Massenspektroskopie.* Verlag Chemie, 1953; 288 pp.
3. Edgar and Michael Lederer, *Progres recents de la chromatographie.* I. *Chimie organique et biochimique*, 1949. II. *Chimie minérale*, 1952, Paris; 146 + 131 pp. Translated by A. T. James as Chromatography Review of Principles and Applications. Elsevier. Ed. 2, 1957; 711 pp.; 3704 references.
4. René Audubert and S. deMende, *Principes de l'electrophorese.* Paris, 1957; 201 pp. Translated by A. J. Pomerans as Principles of Electrophoresis. Hutchinson, 1959; 142 pp.
5. M. Savidan, *Chromatographie.* Dunod, 1958; 112 pp.
6. Heinz Appelt, *Einführung in die mikroskopischen Untersuchungsmethoden.* Akademische. Ed. 4, 1959; 468 pp.
7. M. Pinta, *Recherche et dosage des éléments traces: Spectrophotométrie d'absorption, spectrographie d'émission, polarographie.* Dunod. 1962; 726 pp.
8. W. Batel, *Einführung in die Korngrößenmesstechnik.* Springer, 1961; 698 pp.
9. J. Hengstenberg, B. Sturm, and O. Winkler, *Messen und Regeln in der chemischen Technik.* Springer. Ed. 2, 1963; 1520 pp.
10. R. Freymann and M. Soutif, *Spectroscopie hertzienne appliquée à la chimie: Absorption dipolaire, rotation moléculaire, résonances magnétiques.* Dunod, 1960; 263 pp.

2.3:3300 Metals; Metallography

1. C. G. Nestler, Einführung in die Elektronenmetallographie. Springer, Ed. 2, 1961; 165 pp.
2. Stanley Raimes, Wave Mechanics of Electrons in Metals. Wiley, 1961; 382 pp.
3. V. I. Likhtman, E. D. Shchukin and P. A. Rebinder, Fiziko-khimicheskaya mehanika metallov: Adsorbsionnye yavleniya v protsessakh deformatsii i razrusheniya metallov. Nauk, 1962; 298 pp. (Mechanics of metal working).
4. Garth Thomas, Transmission Electron Microscopy of Metals. Wiley, 1962; 299 pp.
5. Härtemessung: Theorie und Praxis. Symposium, 1959; VDI, 1962; 199 pp.
6. H. Stüdemann, Werkstoffprüfung und Fehlerkontrolle in der Metallindustrie. Springer, 1962; 278 pp.
7. Chemical Analysis of Metals. ASTM. 1956; 640 pp. (Instrumental analysis included).
8. Werkzeugnormen: Maschinenwerkzeuge aus Schnellarbeits- und Werkzeugstahl. DNA and Beuth. Ed. 4, 1963; 296 pp.
9. C. Leymonie, Traceurs radioactifs en métallurgie physique. Dunod, 1960; 224 pp.
10. K. Schoenert and R. Eschelbach, Praktische Metallprüfung. 1. Mechanisch-technologische Prüfverfahren und ihre Anwendung. Braunschweig, 1950; 274 pp. Separate supplements, hardness and tensile test tables, 32 + 68 pp.
11. H. Mayer-Kaupp, editor, Anleitungen für die chemischen Laboratoriumspraxis. Springer, 1952-62. v. 1. W. Seith, K. Ruthardt and W. Rollwagen, Chemische Spektralanalyse, ed. 5; 162 pp. v. 2, G. Kortum, Kolorimetrie, Photometrie und Spektrometrie, ed. 4, 464 pp. v. 3, no data. v. 4, J. Heyrovsky, Polarographischen Praktikum, ed. 2, 1960; 116 pp., v. 5, W. Otting, Raman-Effekt und seine analytische Anwendung, 161 pp. v. 6, H. M. Rauen and W. Stamm, Gegenstromverteilung, 81 pp. v. 7, G. Gerbach, Mikrochemisches Praktikum, 123 pp. v. 8, K. Sagel, Tabellen zur Röntgenstrukturanalyse, 204 pp. v. 9, K. Sagel, Tabellen zur Röntgen Emissions- und Absorptionsanalyse, 135 pp. v. 10, E. Bayer, Gaschromatographie, 163 pp. (translated as Gas Chromatographie, Van Nostrand, 1961; 240 pp.).

2.3:3300 (Cont.)

12. Folke K. G. Odquist and J. Hult, Kriechfestigkeit metallischer Werkstoffe. Springer, 1962; 303 pp.
- 2.3:3400 Medical Instrumentation; Biophysics. (A). Surgical instruments, in the classic sense, are not the objects of attention here. Diagnostic and clinical medicine now utilize electricity, magnetism, electronics, ultrasonics and other principles in instrumental research and treatment.
1. John S. Handloser, Health Physics Instrumentation. Pergamon, 1959; 182 pp.
2. Encyclopedia of Instrumentation for Industrial Hygiene. Michigan, 1956; 1243 pp. Sections: I. Sampling and Analyzing Air. II. Laboratory Instruments. III. Atmospheric Pollution and Meteorology. IV. Air Velocity; Metering Air. V. Sound and Vibration. VI. Ionizing Radiation. VII. Ultraviolet, Visible and Infrared Energy.
3. Otto Glasser, editor, Medical Physics. Year Book. v. I, 1944, 1744 pp. v. II, 1950, 1227 pp.; v. III, 1960, 754 pp. (Much attention to instrumentation).
4. Jan Nyboer, Electrical Impedance Plethysmography: Electrical Resistive Measure of Blood Pulse Volume, Peripheral and Central Blood Flow. Thomas, 1959; 243 pp.
5. Ralph W. Stacy, Biological and Medical Electronics. McGraw-Hill, 1960, 308 pp.
6. Lawrence J. Fogel, Biotechnology: Concepts and Applications. (Man: machine relations and system design). Prentice-Hall, 1963; 826 pp.
7. Mary A. R. Brazier, editor. Computer Techniques in EEG Analysis. Conference, UCLA, 1960. Elsevier, 1961; 98 pp.
8. Ralph W. Stacy, Biological and Medical Electronics. McGraw-Hill, 1960; 308 pp.
9. J. V. Basmajian, Muscles Alive: Their Functions Revealed by Electromyography. Williams, 1962; 267 pp.
10. I. C. Whitfield, Introduction to Electronics for Physiological Workers. Macmillan, Ed. 2, 1959; 263 pp.

2.3:3400(A) (Cont.)

11. Eugene Ackerman, Biophysical Science. Prentice-Hall, 1962; 626 pp. Of 31 chapters 6 are on "specialized instrumentation".
12. Chas. Weyl and S. R. Warren, Jr., Radiologic Physics. Thomas. Ed. 2, 1951; 491 pp.
13. Geo. A. Boyd, Autoradiography in Biology and Medicine. Academic Press, 1955; 399 pp.
14. Donald A. Smith, Medical Electronics Equipment Handbook. Sams, 1962; 256 pp.
15. Edw. J. Bukstein, Medical Electronics. Ungar, 1959; 168 pp.
16. Richard B. Setlow and Ernest C. Pollard, Molecular Biophysics. Addison, 1962; 545 pp.
17. International Conference (1961) on Medical Electronics:Digest. Princeton, 1961; 288 pp. (Follows Proceedings of the First Congress, 1958).
18. Russell H. Morgan and K. E. Corrigan, editors, Handbook of Radiology. Yearbook, 1955; 518 pp.
19. W. W. Grings, Laboratory Instrumentation in Psychology. Palo Alto, 1954; 282 pp.
20. Ed. Massie and Thos. J. Walsh, Clinical Vectorcardiography and Electrocardiography. Year Book. Ed. 4, 1960; 592 pp.
21. Sidney H. Licht, Electrodiagnosis and Electromyography. New Haven. Ed. 2, 1961; 470 pp.

2.3:3400 Medical Instrumentation; Biophysics. (B).

1. P.E.K. Donaldson, Electronic Apparatus for Biological Research. Butterworth, 1958; 718 pp.
2. Johanna M. Van Went, Ultrasonic and Ultrashort Waves in Medicine. Elsevier, 1954; 384 pp.
3. Goodwin M. Breinin, Electrophysiology of Extrocular Muscle, With Special Reference to Electromyography. Toronto, 1962; 148 pp.
4. Alfred Nightingale, Physics and Electronics in Physical Medicine, Bell, 1959; 292 pp.

2.3:3400 Medical Instrumentation; Biophysics. (C).

1. Fritz Löwe, Optische Messungen des Chemikers und des Mediziners. Steinkopff. Ed. 6, 1954; 352 pp.; bibliography.
2. Max Holzmann, Klinische Elektrokardiographie. Thieme. Ed. 4, 1961; 889 pp.

2.3:3400 Medical Instrumentation; Biophysics. (D).

1. Jerzy Dobrski, Aparaty elektromedyczne. Warsaw, 1956; 257 pp.
2. Mikhail N. Livanov, Elektroentsefalografiya. Moscow, 1959; 106 pp.
3. Miroslav Brezina and P. Zuman, Polarografie v lekarstvi, biochemii a farmacii. Prague, 1952; 536 pp. Translated and revised by S. Wawzonek as Polarography in Medicine, Biochemistry and Pharmacy. Wiley, 1958; 862 pp.; bibliography; also by Helga Bazantova as Polarographie in der Medizin, Biochemie und Pharmazie, Leipzig, 1956; 800 pp.
4. Vladimir V. Orlov, Pletizmografiya: metody i primenenie v eksperimental'nikh i klinicheskikh issledovaniyakh. Nauk, 1961; 251 pp.
5. Aksel' I. Berg, Elektronika v meditsine. All-Union Conference on Applications of Electronics in Medicine and Biology, Moscow, 1960; 391 pp.
6. Rostislav M. Meshcherskii, Metodika mikroelektrodnogo issledovaniya. Moscow, 1960; 191 pp.
7. Manuel Besoain-Santander, Electrocardiografia elemental. Santiago Bello, 1959; 460 pp.
8. Simeon Karadimov, Elektromeditsinski aparati. Tekhnika, Sofia, 1960; 214 pp.

2.3:3500 Metrology and Calibration. Metrology here simply means measuring (methods, devices, units). Entries are mainly generalities; measurement in some aspect runs all through this Guide. Calibration is interpreted in its customary meaning.

1. Paul Leinweber, G. Berndt and O. Kienzle, editors, Taschenbuch der Längenmessstechnik für Konstruktion, Werkstatt, Messraum und Kontrolle. Springer, 1954; 806 pp.
2. Philip Rush and John O'Keefe, Weights and Measures. Methuen, 1962; 96 pp.

2.3:3500 (Cont.)

3. John Guild, Diffraction Gratings as Measuring Scales: Practical Guide to the Metrological Use of Moire' Fringes. Oxford, 1960; 211 pp.
4. Poverochnye skhemi. Standards, Instruments and Metrology Commission, Council of Ministers, USSR. Moscow, 1960; 69 pp.
5. C. West Churchman and Philburn Ratvosh, editors, Measurement: Definitions and Theories. Wiley, 1959; 274 pp.
6. Thos. G. Beckwith and N. L. Buck, Mechanical Measurements. Addison, 1961; 559 pp.
7. Units of Weight and Measure: Definitions and Tables of Equivalents. NBS Misc. Pub. 233, 1960; 62 pp.
8. Milton H. Aronson, editor, Weight Measurement and Control. Instruments, 1961.
9. Ralph W. Smith, Testing of Measuring Equipment. Manual for Weights and Measures Officials. NBS Handbook 45, 1951; 205 pp.
10. J. Burton, Pratique de la mesure et du controle dans l'industrie. Dunod. I. Pressions. Niveaux. Debits, 1958; 400 pp. II. Temperatures. Humidites. Densites, 1959; 392 pp.
11. Precision Measurements and Calibration. NBS Handbook 77, 1961; 3 v. 840 + 965 + 1036 pp.
12. P. Debraine, Unites de mesure des grandeurs physiques. Dunod. Ed. 2, 1961; 186 pp.
13. Maurice D. Papin and J. Vallot, Metrologie generale. Dunod. Ed. 4, 1960. I. Generalites, 223 pp. II. Grandeur et unites, 204 pp. Metrologie appliquee. Ed. 3, 1955; 365 pp.
14. Kenneth J. Hume, Engineering Metrology. Macdonald, Ed. 2, 1963; 358 pp.; bibliography.
15. Kenneth J. Hume and G. H. Sharp, Practical Metrology. Macdonald, 1953-62; 4 v.

2.3:3600 Testing Materials

1. Arnold E. Lever and Jack Rhys, Properties and Testing of Plastic Materials. Temple. Ed. 2, 1962; 336 pp.
2. H. A. Gardner and G. G. Sward, Paint Testing Manual. Ed. 12, 1962.
- 2a. Erich Siebel, editor, Handbuch der Werkstoffpruefung. Springer. Ed. 2 in 5 v. I. Pruef- und Messeinrichtungen, Ed. 2, 1958; 890 pp.

- II. Prüfung der metallischen Werkstoffen, Ed. 2, 1955; 754 pp.
- III. Prüfung nichtmetallischer Baustoffe, Ed. 2, 1957; 1026 pp.
- IV. Papier- und Zellstoffprüfung, Ed. 3 in preparation (1964).
- V. Prüfung der Textilien, Ed. 1 and 2, 1960; 1440 pp.

- 3. Rudolf Nitzsche and K. W. Wolf, editors, Kunststoffe. Springer, 1961-62.
2 v. I. Struktur und physikalisches Verhalten, 1962; 974 pp.
II. Praktische Kunststoffprüfung, 1961; 656 pp.
- 4. Symposium on Stress-Strain-Time-Temperature Relationships in Materials.
ASTM Special Tech. Pub. 325, 1962; 129 pp.
- 5. Herbert Abraham, Asphalts and Allied Substances: Their Occurrence
(v. 1, 1960), Modes of Production (v. 2 and 3, 1961-62), Uses in the
Arts (v. 2 and 3), and Methods of Testing. v. 4 (1962), Methods of
Testing: Raw-Bituminous Materials, 435 pp; v. 5, (1963) Methods of
Testing: Fabricated Bituminous Products, 432 pp.
- 6. Jas. F. Young, Materials and Processes. Wiley, Ed. 2, 1954; 1074 pp.
- 7. International Symposium on Plastics Testing and Standardization. ASTM
Special Tech. Pub. 247, 1959; 272 pp.
- 8. K. Wellinger and E. Krägeloh, editors, Werkstoffe und Werkstoffprüfung.
(v. 3 in Lueger's Lexikon der Technik, Ed. 4). Springer 1961; 816 pp.
- 9. H. E. Davis, G. E. Troxell and C. T. Wiskocil, Testing and Inspection of
Engineering Materials. McGraw-Hill. Ed. 2, 1955; 431 pp. bibliography.
- 10. Georg Reicherter, editor, Härteprüfungen nach Brinell, Rockwell, Vickers.
Springer. Ed. 2, 1959; 216 pp.
- 11. A.C.H.Deitz and F.R.Eirich, High Speed Testing. Symposium, 1958. Wiley.
3 v. I, 1960, 120 pp.; II, 1961, 78 pp.; III, 1962, 104 pp.
- 12. Proceedings of the Japan Congress on Testing Materials. JSTM. I (1957)
179 + 21 + 147 pp. II (1958), 244 + 87 pp. III (1959), 163 + 100 pp.
IV (1960), 151 + 73 pp. VI (1962), 156 pp.
- 13. Richard Glockner, Materialprüfung mit Röntgenstrahlen, unter besonderer Be-
rücksichtigung der Röntgenmetallkunde. Springer. Ed. 4, 1958; 530 pp.
- 14. Robt. C. McMaster, editor, Nondestructive Testing Handbook. Ronald 1961;
1850 pp. in 2 vol.
- 15. C. Massonnet, Resistance des materiaux. Dunod, 1962; 520 pp.
- 16. J. Krautkrämer and H. Krautkrämer, Werkstoffprüfung mit Ultraschall.
Springer, 1961; 501 pp.

2.3:3700 Standards; Specifications. Commodity standards, property standards and tolerances, and procedure standards are so numerous that the literature of standards has great numbers of separates. Entries here are mainly guides to aid in locating individual items or publications. Serials issued by standardizing societies or agencies are also important; see 2.9:P1550.

1. DIN Taschenbuch. 19. Materialprüfnormen für metallische Werkstoffe. DNA. Ed. 3, 1961; 294 pp.
2. Specifications, Tolerances and Regulations for Commercial Weighing and Measuring Devices. NBS Handbook H44, Ed. 2, 1955 (Corrected through 1961), 1962; 173 pp.
3. Paul A. Cooley, Ann E. Rapuzzi and A. S. McAllister, National Directory of Commodity Specifications. NBS Mics. Pub. M178, 1945; 1311 pp. Supplement, 1947, 322 pp. Revision assigned to ASA.
4. M. Klein, Einführung in die DIN-Normen. DNA. Ed. 4, 1961; 437 pp.
5. Directory of Technical Specifications: Electronic Test Instruments. TI, 1962, in 6 v.: 1. 2. Sources. 3,4. Modifiers. 5,6. Scalers.

2.4 DISSERTATION GUIDES

Most nations, and many universities individually, publish lists of their academic dissertations. Only a few of those most likely to be useful are listed here; many occur in national bibliographies.

1. Dissertation Abstracts. Microfilms. Monthly, 1938--. (Title was Microfilm Abstracts, 1938-51).
2. Canadian Theses: List of Theses Accepted by Canadian Universities. Ottawa. Annual, 1952--.
3. Master's Theses and Doctoral Dissertations in the Pure and Applied Sciences Accepted by Colleges and Universities of the U. S. Purdue, Annual, 1957--. About 6000 entries per year.
4. Abstracts of Theses. MIT. Annual, 1951--.
5. Jahresverzeichnis der deutschen Hochschulschriften. Leipzig. Annual, 1885--.
6. Index to Theses Accepted for Higher Degrees in the Universities of Great Britain and Ireland. ASLIB. Annual, 1954--.
7. Bibliografiya disertatsii. Doktorskie disertatsii. Annual. Moscow. (Medicine and pharmacy not included).

2.4 (Cont.)

7. Doctoral Dissertations Accepted by American Universities. Wilson Annual, 1933--. (Preceded by Doctorates Conferred in the Sciences by American Universities. NAS-NRC, 1919-32).

2.5 DIRECTORIES; BUYERS' GUIDES; EXHIBIT GUIDES

Entries in this section are selected solely for probable reference utility. They do not imply or intend any endorsement of the publications or of any groups or interests represented therein.

2.5:D100 Directories. (A).

1. MacRae's Bluebook. Chicago. Annual, 1894--.
2. Instruments and Control Systems: Buyers' Guide. Instruments. Annual, 1944--. Absorbed Instruments Index (biennial, 1940-56).
3. Mechanical Catalog With Directory of Manufacturers of Industrial Equipment, Materials and Supplies. ASME, Annual, 1911--.
4. Heating, Ventilating and Air Conditioning Guide. ASHAE, 1959; 768 + 476 pp.
5. Missile Market and Product Guide. American Aviation. Annual, 1955--.
6. Design News Reference Manual. Detroit. Annual, 1953--.
7. Research Equipment Exhibit. NIH. Annual, 1951--.
8. Aero/Space Engineering Catalog. IAS. Annual, 1945--.
9. Who's Who in Electronics. Cleveland. Annual, 1956--.
10. Electronic Industries Directory. Chilton. Annual, 1943--; All Reference issue added, 1958--.
11. Thomas' Register of Manufacturers. Annual. 1911--(Ed. 53, 1963). I, II, III, Products. IV. Manufacturers' Names; Associations; Periodicals. V. Index. Thomas Micro-Catalogs. Ed. 1, 1963; 33 pp. Lists over 2000 manufacturers whose catalogs are available to subscribers on microfilm.
12. Chemical Engineering Catalog. Reinhold. Annual, 1916--.
13. Radio-Electronic Master. United Catalog. Annual, 1937-- (formerly Radio's Master).

2.5:D100(A) (Cont.)

14. Control Applications Guide. Reinhold. Annual supplement to Automatic Control.
15. Radiation Instrument Catalog. AEC. Irregular, 1949--.
16. Electronic Buyers' Guide. McGraw-Hill, Annual supplement to Electronics, 1941--.
17. Microwave Engineers' Handbook and Buyers' Guide. Horizon. Annual, 1961--.
18. Instrument-Automation Conference and Exhibit. ISA. Annual, 1946--.
19. International Buyers' Guide and Reference Data Manual: Supplement to Nucleonics. McGraw-Hill. Annual, 1943--.

2.5:D100 Directories. (B).

1. Canadian Trade Index.. CMA. Annual, 1900--.
2. Handbook of Scientific Instruments and Apparatus. PS. Annual, 1939--.
3. British Instruments and Buyers' Guide. United. Annual, 1959--.
Merger of British Scientific Instruments with Instruments Directory and Buyers' Guide.
4. Engineer Buyers' Guide. Annual Supplement to Engineer (London).
5. British Radio and Electronic Components: Official Catalogue and Buyers' Guide. London, 1957; 318 pp.

2.5:D100 Directories. (C).

1. Handbuch der Maschinen-Industrie. VDMA. Irregular, 1937--.
(Directory of West German machine tool manufacturers).
2. Deutsche Industriemesse: Amtlicher Messe-Katalog. DMA. Catalog for each exposition; exhibitors from about 60 trade associations covering broad instrumentation interests.
3. H. von Stutterheim, editor, Industrie der Messtechnik: Warenkatalog der Mess- und Prüfmittel. Darmstadt. Ed. 1, 1956; 704 pp.
4. H. Pietsch, editor, Interkama: Offizieller Ausstellungs-Katalog, Internationaler Kongress mit Ausstellung für Messtechnik und Automatik. Düsseldorf, 1957; 376 pp.

5. Achema Jahrbuch: Bericht über Stand und Entwicklung des chemischen Apparatewesens. Europäischer Katalog. Dechema. Irregular, 1920-37; no issues, 1938-49; triennial (issued in the middle year), 1950--; Achema XI, 1962-63-64. From 1957 in German, French English and Spanish. Lists research institutions, suppliers, trade names.
6. Exposition d'Instruments et Materiels Scientifiques. SFP. Annual, 1904--.
7. Guide des machines, appareils et outils. Geneva, 1951; 1388 pp. (in 5 languages).

2.6 GUIDES TO TECHNICAL LITERATURE AND INFORMATION SERVICES

Manuals of instruction as to sources and use of technical literature are entered here; so are lists of sources and information services.

There is some overlap with Section 2.7; in case of doubt, both sections and the subject index should be consulted.

2.6:G100 Guides: General.

1. Arthur D. Roberts, Introduction to Reference Books. LA. Ed. 3, 1956; 237 pp.
2. Douglas J. Foskett, Information Service. Crosby, 1958; 142 pp.
3. Directory of Continuing Numerical Data Projects. NAS-NRC Pub. 837, 1961.
4. Scientific Information Activities of the NAS-NRC. NRC Pub. No. 1031, 1962; 49 pp.
5. Constance M. Winchell, editor, Guide to Reference Books. ALA. Ed. 7, 1951; 645 pp.; supplements 1950-52; 1953-55; 1956-58.
6. Carter Alexander and Arvid J. Burke, How to Locate Educational Information and Data. Columbia. Ed. 4, 1958; 419 pp.
7. Specialized Science Information Services in the U. S. BMI for NSF. NSF No. 61-68, 1961; 528 pp. In 25 numbered sections, including:
 1. Aerospace. 4. Astronomy. 9. Earth Sciences. 10. Electronics and Electrical Engineering. 18. Mathematics. 19. Mechanical Engineering. 20. Medical Sciences and Equipment. 21. General Science and Technology. Lists 427 organizations (Government, academic and private) offering some type of information service.

2.6:G100 (Cont.)

8. Bibliographie des sciences et de l'industrie: Revue de librairie et d'information. Dunod. Monthly, 1903--. I. Livres français et étrangers. II. Livres étrangers en cours de traduction. III. Revues françaises. (Numerous European publishers issue similar serial lists).
9. Elizabeth G. Bowerman, editor. Union List of Technical Periodicals in 200 Libraries of the Science and Technology Group. SLA. Ed. 3, 1947; 285 pp.
10. Scientific and Technical Serial Publications: U. S., 1950-53, 238 pp.; USSR, 1945-53, 118 pp. LC, 1954.
11. Robt. L. Collison, Library Assistance to Readers. Crosby. Ed. 3, 1960; 131 pp.
12. Science, Government and Information: Responsibilities of the Technical Community and the Government in the Transfer of Information. PSAC, 1963; 52 pp.
13. Laurence F. Schmeckebier and Roy B. Eastin, Government Publications and Their Use. Washington, 1961; 476 pp.

2.6:G200 Guides: Defined Subject Areas.

1. J. Edwin Holmstrom, Records and Research in Engineering and Industrial Science: Guide to Sources, Processing and Storekeeping of Technical Knowledge, With a Chapter on Translating. Chapman. Ed. 2, 1947; 366 pp.
2. Naming and Indexing of Chemical Compounds. Introduction to the Subject Index, Chemical Abstracts, v. 56 (1962). ACS, reprint issued 1962; 98 pp.
3. Sylvia Goldman, Guide to the Literature of Engineering, Mathematics and the Physical Sciences. APL. TG 334-1, 1959; 52 pp.
4. Nathan G. Parke III, Guide to the Literature of Mathematics and Physics Including Related Works on Engineering Science. Ed. 2, 1958; 436 pp. (Supplement by Sylvia Goldman, APL TG 334-1, 1959).
5. Evan J. Crane, Austin M. Patterson and Eleanor B. Marr, Guide to the Literature of Chemistry. Wiley, Ed. 2, 1957; 397 pp.
6. M. Guy Mellon, Chemical Publications: Their Nature and Use. McGraw-Hill, Ed. 3, 1958; 327 pp. (Ed. 4 in preparation, 1963).

2.6:G200 (Cont.)

7. Blanche H. Dalton, Sources of Engineering Information. California, 1948; 198 pp.
8. Jos. Pearlstein, Searching the Literature for Transducer Information. I. Guide to the Literature. OTS, 1959; 57 pp. II. Survey of the Field. DOFL Rept. TR-898, 1960, and supplement, DOFL Rept. TR-996, 1961; 46 pp. HDL.

2.6:G300 Guides: Defined Sources.

1. Reginald R. Hawkins, editor, Scientific, Medical and Technical Books Published in the U. S., 1930-1944: Selected List of Titles in Print, With Annotations. NRC. Ed. 2, 1958, 1491 pp.
2. Directory of Engineering Data Sources: Guide to American Literature in Engineering and Related Sciences. SRI, 1948; 63 pp.
3. Soviet Science and Technology: Bibliography of the State of the Art, 1955-61. LC, 1962.
4. British Scientific and Technical Books: Select List of Recommended Books Published 1953-52. Aslib, 1956; 364 pp. Supplement, 1953-57. Aslib, 1960; 251 pp.
5. Journals in Science and Technology Published in Japan and Mainland China: A Selected List. LC, 1961; 47 pp.
6. Guide to the World's Abstracting and Indexing Services in Science and Technology. NFS AIS, Rept. 102, 1963; 183 pp., 1855 entries.
7. Guide to U. S. Indexing and Abstracting Services in Science and Technology. NFS AIS Rept. No. 101, 1960 (largely superseded by NFS AIS Rept. 102).

2.7 INDEXES OF TECHNICAL LITERATURE

This section has some overlap with 2.6:G300; in case of doubt, consult both sections and the subject index.

2.7:I100 Indexes: General.

1. Index Bibliographicus: Science and Technology. FID. Ed. 4, 1959. (Ed. 1, 1923 and Ed. 2, 1931, were issued by the League of Nations; Ed. 3, Part 1 (Science and Technology), 1951, by UNESCO).
2. Cumulative Book Index. Wilson. Monthly, 1933--; cumulations at intervals.

2.7:I100 (Cont.)

3. Publishers' Trade List Annual: Book Catalogs of U. S. publishers. Bowker. 3 v.
4. Wm. A. Smith and F. L. Kent, editors, World List of Scientific Periodicals Published in the Years 1900-1950. Academic Press. Ed. 3, 1952; 1058 pp.
5. Air University Periodical Index. Air Univ. Quarterly, 1949--. English language literature, about 18,000 entries per year; for official use (unclassified).
6. Oswald T. Zimmerman and Irvin Lavine, Handbook of Material Trade Names. IRS, 1953; 794 pp. Supplements: 1, 1957; 378 pp.; 2, 1958; 356 pp.; 3, 1960; 400 pp.
7. Applied Science and Technology Index. Wilson. Monthly, 1960--; continues Industrial Arts Index, 1913-59; annual and biennial cumulations; around 80,000 entries per year.
8. Repertorium Technicum, 1931--. NIDR. (International bibliography).
9. Eileen C. Graves, editor, Ulrich's Periodicals Directory: A Classified Guide. Bowker, Ed. 10, 1963.
10. New Serial Titles: Union List of Serials Commencing Publication after 31 Dec. 49. LC. I, 1950-55; II, 1956-60; 5-year cumulations planned, 1961--.

2.7:I200 Indexes: Defined Subject Areas.

1. Chemical Titles. ACS. Semimonthly, 1961--. About 75,000 entries per year.
2. Index of Monographs. Bell Labs., 1934--. v.1(1-750); v. 2(751-1199); other issues at intervals in Bell System Technical Journal, to 4289 (July 1963).
3. Bibliography of Agriculture. USDA Library. Monthly, 1942--. Over 100,000 entries per year.
4. Current Contents of Space, Electronic and Physical Sciences. Philadelphia. Weekly, 1961--; tables of contents of about 100 periodicals.
5. Consolidated Index of Selected Property Values: Physical Chemistry and Thermodynamics. NAS-NRC Pub. 976, 1962.
6. British Technology Index. LA. Monthly, 1962--; annual cumulations.

2.7:I300 Indexes: Defined Sources.

1. Soviet Science and Technology: Bibliography of the State of the Art, 1955-61. LC, 1962.
2. Polish Scientific Periodicals: Current Contents With Author Directory. Warsaw. 8-10 issues per year, 1961--.
3. Technical Translations. OTS. Semimonthly, 1959--. Replaced Bibliography of Translations from Russian Scientific and Technical Literature(LC, 1953-56) and Translation Monthly (SLA,1955-59).
4. Monthly Index of Russian Accessions. LC, 1948--.
5. U. S. Government Research Reports. OTS. Monthly, 1946--. (Title was Bibliography of Technical Reports, 1946-53).
6. East European Accessions List. LC, Monthly, 1952--.
7. Zasshi Kiji Sakuin: Shizen Kagaku-Hen.Japanese Periodical Index: Natural Science. Quarterly, 1950--; about 50,000 entries per year from Japanese literature.
8. Winifred Gregory, editor, Union List of Serials in Libraries of the U. S. and Canada. Wilson, Ed. 2, 1943; 3065 pp.; supplements at irregular intervals.
9. Anne M. Boyd and R. E. Rips, editors, U. S. Government Publications. Wilson. Ed. 3, 1950; 627 pp.
10. NLL Translations Bulletin. NLL.Monthly, 1959--(continues Translated Contents Lists of Russian Periodicals, DSIR, 1954-58).
11. Publications of NBS, 1901-47. NBS Circular 460; 1948; 375 pp. Supplements: 1947-57; 1958; 373 pp.; 1957-60, Misc. Pub. 240, 1961; 391 pp.; 1960-62, 29 pp.

2.8 PATENTS

The paucity of patent citations in reference lists of scientific papers and technical reports surprises patent attorneys. Profound discussions of theory are common in patent specifications. An inventor of a half century ago even patented two pet theological doctrines under the guise of educational devices. To encourage more attention to patents as primary sources of published information, they are given extra emphasis here.

2.8Pa 100: Patents: Official Gazettes and Abridgments.

1. Industriëlle Eigendom. The Hague. Monthly, 1912--. Bijblad bij de Industriëlle Eigendom. Monthly, 1933--. (Patent Office rulings and announcements).
2. Dansk Patenttidende. Copenhagen. Weekly, 1894--. Abridgments.
3. Official Gazette of the USPO. Weekly, 1872--. Mechanical, Electrical and Chemical sections.
4. Canadian Patent Office Record. Ottawa. Weekly, 1873--; claims and drawings. (Canadian patents were not printed until 1948).
5. Official Journal (Patents). BPO. Weekly, 1854--. (Title was Commissioner of Patents Journal, 1854-83; Illustrated Official Journal, 1884-1931). See also Abridgments.
6. Bulletin officiel de la propriété industrielle. Paris. Weekly, 1884--. (See also Abrege descriptifs).
7. Patent Office Journal. Pretoria, South Africa. Weekly, 1948--.
8. Auszüge aus den Patentschriften. DPA. Weekly, 1877--.
9. Schweizerische Patent-, Muster- und Modellblatt. Bern. Semimonthly, 1888--.
10. Abridgments of Specifications. BPO. Irregular, 1617--. (Title sometimes Illustrated Abridgments).
11. Tokkyo Koho. Japanese Patent Office. Irregular (every 50 patents), 1885--. Abridgments; in Japanese.
12. Abreges descriptifs des brevets d'invention. Paris. Weekly, 1960--. (Was a section in Bulletin officiel, 1958-59). About 40,000 French patent abridgments per year.
13. Svensk Tidsskrift för Industriellt Rättskydd. Stockholm. Biweekly, 1886--. (Appeared only as a supplement in Industriell Teknik, 1879-1885; thereafter published in both forms). Register till Patent (index). Annual, 1885--.
14. Australian Official Journal of Patents, Trade Marks and Designs. Canberra. Weekly, 1904--.
15. Bollettino dei brevetti: Invenzioni industriali; modelli industriali; marchi d'impresa. Rome. Monthly, 1901--.

2.8: Pa100 (Cont.)

16. Auszüge aus den Patentanmeldungen. DPA. Weekly, 1955--; over 100,000 abridgments per year of German patent applications. Beginning with Ger. P. 1,000,001 the Auslegeschriften (applications open to public opposition) carry a serial number which will also be carried by the final patent if granted. (Auszüge aus den Patentschriften began in 1880.)
17. Patentblatt: Behanntmachungen auf Grund des Patentgesetzes und des Gebrauchsmustergesetzes. DPA. Weekly, 1881--; See also Auszüge.
18. Recueil des brevets d'invention. Brussels. Monthly, 1954--.
19. Österreichisches Patentblatt. Vienna. Monthly, 1899--.
20. Byulleten izobretenii. Moscow. Semimonthly, 1924--. Translated as USSR Official Bulletin of Patents. Derwent. Semimonthly, 1961--, and as USSR Patents and Inventions. Pergamon. Monthly, 1959--.
21. Norsk Tidende for det Industrielle Rettssvern. Avdeling I. Patenter. Oslo. Weekly, 1886--.
22. Erfindungs- und Vorschlagswesen. Amt für Erfindungs- und Patentwesen, DDR. Monthly, 1952--, with Patentkartei (abridgments on cards).
23. Gaceta de la propiedad industrial. Mexico, D. F. Monthly, 1926--.

2.8:Pa200 Patents: Official Searching Aids.

1. Key to the Classifications of the Patent Specifications of France, Germany, Austria, Netherlands, Norway, Denmark, Sweden and Switzerland in the Library of the Patent Office. BPO. Ed. 3, 1915; 190 pp.
2. Manual of Classification. USPO. Looseleaf; current amendments by subscription.
3. Patent Abstract Series. OTS. Irregular (2 or 3 year intervals), 1953--. Abstracts of Government-owned patents offered for license, about 10,000 in all; 7 series, including one for instrumentation and one for electricity and electronics.
4. Gruppeneinteilung der Patentklassen. DPA. Ed. 5, 1951; 398 pp. Ed. 6, 1949; 498 pp. Ed. 7, 1958, looseleaf. Translation: Manual of Patent Classification, German Patent Office. POSL and OTS, 1963. (The subject indexes, not the text, of the 1910 and 1914 editions were translated by N. E. Kuhlmann for POSL, 1911 and 1919).

2.8:Pa200 (Cont.)

5. *Ukazatel' klassov avtorskykh svidetel'stv i patentov, vydavaemykh v SSSR s pozdrozdeleniem ikh na podklassy, gruppy i podgruppy.* Council of Ministers, Moscow, 1962; 824 pp. (Soviet classification manual).
6. *Abridgment Class, Classification and Index Key.* BPO, London, 1937; 40 Sections in 2 v. Supplements at irregular intervals.
7. *Patentliste: Liste des Brevets: Lista dei Brevetti.* Swiss Patent Office, Bern. Semimonthly, 1889--; reprinted from Schweizerisches Handelsamtblatt.
8. *Indexes of Patents of Invention.* BPO. 1854-1857. Subject Matter Index (Made From Titles Only), March 2, 1617 to October 1, 1852; 970 pp (1851). Alphabetical Index of Patentees, 1617-1852; 647 pp. (1854). Chronological Index, 1617-1852; 1554 pp (1854). Reference Index, 1617-1852; 681 + 91 pp. (1855). Subject Matter Index, (annual), 1853 to date. Fifty years Subject Index, 1861-1910, in 146 Sections by classes, in 4 volumes, 1915. Fifty years Subject Index, 1911-1960, for sale by classes in 271 sections.
9. *Manual of Classification,* French Patent Office. POSL. Translation by N. E. Kuhlmann, in manuscript form.
10. *Izobratel'stvo v SSSR.* Council of Ministers, Moscow. Monthly, 1956--. (Reports of inventions; technical articles).
11. *Internationale Patentklassifikation: Klassen und Unterklassen,* Heymann, 1956; 44 pp. (In German, English and French).

2.8:Pa300 Patents: Unofficial Searching Aids.

1. *Japan Patent News.* Interpas. Monthly, 1960--; about 30,000 Japanese patent citations per year, in 7 separate sections.
2. *Index of Patents:* 1790-1960. Bowman. 1963. Chemical, 6 v. Electrical, 5 v. Mechanical, 5 v. From 1961 each group will be indexed in the National Catalog of Patents (2.8:Pa200), with the grouping assigned by the U. S. Official Gazette. Include a guide to the classification system, with subclass, subject and number indexes, in each group.
3. *National Catalog of Patents.* Bowman. Annual, 1961--. Follows the U.S. Official Gazette grouping; 2 or 3 v. per year in each group, some with separate volumes of cross-references from related subclasses to the assigned subclasses.

4. Erfinder- und Warenenschutz im In- und Ausland. DDR, 1956-57. I. E. Arlt and H. Erasmus, Deutschland mit Anhang: Internationale Vorträge, 472 pp. II. H. Erasmus, USSR und Länder der Volksdemokratie, 468 pp. III. Übriges Ausland, 994 + 912 + 878 pp.
5. Russian Patent Abstracts: Chemistry and Chemical Engineering. TI, Monthly, 1960--. (Translated abridgments).
6. Bulletin analytique des brevets français. AUDD. Annual, 1944--.
7. Uniterm Electronics Patents Service. II. Quarterly, 1955--; cites about 5000 patents per year. Uniterm Index of U.S. Chemical Patents. Bimonthly, 1950--. Index (1950-62) on magnetic tape, 1963.
8. Belgian Patent Reports. Derwent. Biweekly, 1961--. Chemical Patent abstracts.
9. How to Obtain Information from U. S. Patents. USPO, 1962; 21 pp.
10. British Patents Abstracts. Derwent. Biweekly, 1954--; about 23,000 abstracts per year. (Preceded by Commonwealth Patent Reports).
11. Eduard Reimer, Europäisierung des Patentrechtes. Heymann, 1956; 305 pp. Europarat Committee report (1951-55) on plans for a common European patent law.
12. French Patents Report. Derwent. Weekly, 1961--. (South African and Indian patents abstracted in some issues).
13. Japanese Patent Abstracts and Japanese Patent Report (new name in 1962). Interpas and Derwent, 1961--. Weekly; translations of abridgments (native Japanese inventions) or of title data (foreign inventions).
14. German Patents Abstracts. Derwent. Weekly, 1956--; about 5600 abstracts per year.
15. Interpas Monthly Patent Data Bulletins. Monthly, 1957--, in 26 separate sections (IPC classes); about 320,000 citations per year of patents from 20 nations.

2.8:Pa400 Patents: Translations.

1. Subject Matter Index of Patents for Inventions (Brevets d'Invention) Granted in France from 1791 to 1876 incclusive. POSL, 1883; 934 pp. (Manuscript copy).

2. Soviet Inventions Illustrated. Derwent. Monthly, 1962--; around 9000 abstracts (with drawings) per year of Soviet patents. Sections: Chemical; Electrical; Mechanical and General. (Former title: Russian Patent Report).

2.9 PERIODICALS AND SERIALS.

Discontinued titles are omitted unless they have special reference utility. Some series of monographs are entered in Section 2.3; the definition of "Serials" is somewhat elastic.

2.9:P100 Instrumentation: General. (A).

1. Lab World. Los Angeles. Monthly, 1950--. Abstracts: Annual Source-book of Laboratory Technic, 1950--.
2. Instruments and Control Systems. Instruments. Monthly; 1928--.(Earlier titles: Instruments and Instruments and Automation.) Instruments Index is one issue in alternate years.
3. SPIE Journal. Bimonthly, 1962--.
4. Design News. Englewood, Colorado. Bimonthly, 1946--.
5. Review of Scientific Instruments. AIP. Monthly, 1930--.
6. ISA Journal. Monthly, 1946--. (As a section in Instruments, 1946-53). ISA Proceedings: Annual, 1947--. ISA Transactions, Quarterly, 1962--. Biomedical Sciences Instrumentation. Annual, 1963--.
7. Research Development. Chicago. Monthly, 1950--. Title was Industrial Laboratories, 1950-59.

2.9:P100 Instrumentation: General. (B).

1. Journal of Scientific Instruments. IP. Monthly, 1923--.
2. Laboratory Practice. United. Monthly, 1952--. (Abstract section, British patents).
3. Instrument Practice: Control Systems; Electronics; Automation. United. Monthly, 1947--.
4. Transactions of the SIT. Quarterly, 1949--. (Quarterly Bulletin and Review included).
- 4a. Micronics. International Fine Technics Association. Quarterly, 1964--.

2.9:P100(B) (Cont.)

5. Australian Journal of Instrument Technology. SITA. Quarterly, 1945--.
6. R & D Research and Development for Industry. Heywood, 1961--.
7. Instrument Engineer. Luton (England). Semiannual, 1952--.
8. Metric Measures: Journal of Weights and Measures. Delhi. Bimonthly, 1958.
9. Instrument Review: Instruments, Electronics, Automation. London, 1954--.

2.9:P100 Instrumentation: General. (C).

1. Mesures et controle industriel. Paris, 1948--. Continues Mesures (1936-47). Lists French patents.
2. Askania Review. Berlin. Quarterly, 1937--. Also in German, French and Spanish editions.
3. Zeitschrift für Instrumentenkunde. Vieweg. Monthly, 1881-1944, 1947--. Supplement, Deutsche Mechaniker-Zeitung, 1898-1916, appeared separately, 1917-20.
4. Allgemeine Vermessungsnachrichten. Irregular, 1889--; supplement, Bildmessung und Luftbildwesen, 1926-38.
5. TIFO: Technische Informationen Feinmechanik und Optik: Berichte über neue Instrumente des In- und Auslandes. Cologne. Monthly, 1953--.
6. ATM: Archiv für technisches Messen. Monthly, 1931--. Archivteil, about 400 abstracts per year.
7. Instruments et Laboratoires: Revue bilinguale. Dunod. Quarterly, 1957--. Absorbed Laboratoires (1951-56) in 1957.
8. Bulletin annuel de la Societe suisse de chronometrie. Lausanne. Annual, 1959--.
9. Feingeräte Technik. Verlag Technik. Monthly, 1952--; bibliographies.
10. Fijntchniek. Nederlandse Vereniging voor Fijnmechanische Techniek. Utrecht.

2.9:P100 Instrumentation: General. (D).

1. Pribory i tekhnika eksperimenta. Moscow. Bimonthly, 1956--. Translated as Instruments and Experimental Techniques. ISA, 1958--.

2.9:P100(D) (Cont.)

2. Keisoku: Journal of the SIT(Japan). Monthly, 1951--.
3. Priborostroenie. Moscow. Monthly, 1956--. Translated as Instrument Construction, Taylor-F, 1959--.
4. Journal of the Society of Instrument and Control Engineers. Monthly. Tokyo, 1962--. (In Japanese, summaries and captions in English).

2.9:P130 Instrumentation: Special Topics.

1. Horological Journal. BHI. Monthly, 1858--.
2. Methods in Medical Research. Yearbook. Irregular, 1948--. Many instrumentation topics.
3. Bulletin annuel de la SSC et du Laboratoire Suisse de Recherches Horlogeres. Annual, 1932--.
4. Power Test Codes. ASME. Instruments and Apparatus supplements. Irregular 1931--.
5. American Journal of EEG Technology. Phoenix, Arizona, 1961--.
6. Tools of Biological Research. Blackwell. Annual, 1959--.
7. Annales francaises de la chronometrie. CNRS. Quarterly, 1931--. (Abstract section).
8. Military Systems Design. Instruments. Bimonthly, 1957--.
9. Bulletin of Gastroscopy and Esophagoscopy. Washington. Monthly, 1959--. (Was Bulletin of the American Gastroscopic Club, 1942-48, and Bulletin of the American Gastroscopic Society, 1948-58).
10. Medical Electronics News. Instruments. Quarterly, 1961--.

2.9:P170 Company Journals. Some of these are house organs, selected for high concentration of technical matter; some are technical periodicals with a manufacturer's backing.

1. Marconi Instrumentation. Marconi Instruments, Ltd. Quarterly, 1955--.
2. Jenaer Jahrbuch. Zeiss. Annual, 1950--. Jena Review. Irregular, 1956--. Editions also in German, Russian and French. Jena Nachrichten. Irregular, 1954--.
3. Science Tools: LKB Instrument Journal. Irregular, 1954--.

2.9:P170 (Cont.)

4. DuMont Instrument Journal. Quarterly, 1957--.
5. Taylor Technology. Quarterly, 1948--.
6. Aminco Laboratory News. AI. Quarterly, 1945--.
7. Technique: Journal of Instrument Engineering. Muirhead & Co., Ltd. Quarterly, 1947--.
8. Engelhard Industries Technical Bulletin. Quarterly, 1960--.
9. Sperry Engineering Review. Quarterly, 1948--.
10. Instrumentation. M-H. Quarterly, 1943--.
11. Norelco Reporter. Philips. Quarterly, 1954--.

2.9:P200 Computers. Mathematical machines and data processing devices.

1. IBM Journal of Research and Development. Quarterly, 1957--.
2. Digital Computer Newsletter. ONR. Quarterly, 1950--.
3. Information and Control. Academic Press. Quarterly, 1957--.
4. Computers and Automation. Newtonville, Mass. Monthly, 1951--. Annual buyers' guide.
5. Operations Research. ORSA. Quarterly, 1953-- (formerly Journal of the ORSA).
6. Sigma: Tijdschrift voor industriële statistiek en kwaliteitsbeleid. Rotterdam. Bimonthly, 1956--.
7. Advances in Computers. NBS and Academic Press. Annual, 1960--.
8. Computer Design. Boston. Monthly, 1962--.
9. Technometrics: Journal of Statistics for the Physical, Chemical and Engineering Sciences. ASQC. Quarterly, 1959--.
10. ACM Communications. Monthly, 1958--. Computing Reviews. Bimonthly, 1960--. Journal. Quarterly, 1954--.
11. Proceedings of the Joint Computer Conferences. IRE. About semiannual, 1952--.
12. Computer Journal. BCS. Quarterly, 1958--.

2.9:P200 (Cont.)

13. MTW Mathematik. Technik. Wirtschaft: Zeitschrift für moderne Rechen-technik und Automation. Vienna. Quarterly, 1954--.
14. Datamation. Monthly, 1955--. Los Angeles. (Formerly Magazine of Datamation).
15. ICC Bulletin. Rome. Quarterly, 1962--. Supplement: Computer Laboratories Directory.
16. Elektronische Rechenanlagen. Munich. Bimonthly, 1959--. Beihefte, irregular, 1961--.

2.9:P250A Automation and Process Control.

1. Control Engineering. McGraw-Hill. Monthly, 1954--.
2. Automation. Penton. Monthly, 1954--.
3. Proceedings of the EIA Conference on Numerical Control Systems for Machine Tools. EIA and Reinhold, Irregular, 1957--.
4. Proceedings of the EIA Conference on Automation Systems for Business and Industry. EIA and Reinhold. Irregular, 1958--.
5. Automation Express. IPI. 10 issues per year, 1958--; translations and abstracts from Russian, about 500 per year. (See also Electronics Express; Physics Express; Power Express).
6. Data Systems Engineering (new title, 1963, of Automatic Control). New York. Monthly, 1954--.
7. Automation Reports. Biweekly, 1963--. Commerce Clearing House, Chicago.

2.9:P250B Automation and Process Control.

1. Journal of Electronics and Control. London. Bimonthly, 1955--. Affiliated with Philosophical Magazine.
2. Measurement and Control. London. Monthly, 1962--.
3. Automation in Industry. London. Monthly, 1954--. Supplement. Instrument Review. (Title was Instruments in Industry, 1954-57).

2.9:P250C Automation and Process Control.

1. Automazione e automatismi. Milan. Bimonthly, 1957--; abstract section; emphasis on textiles.

2.9:P250C (Cont.)

2. Kybernetik: Zeitschrift für Nachrichtenübertragerei, Nachrichtenverarbeitung, Steuerung und Regelung in Organismen und in Automaten. Springer. Irregular, 1963--.
3. Automatisme pratique: Regulation et automatique. Dunod. Bimonthly, 1962--.
4. Sprechsaal für Keramik, Glas, Email, Coburg. Semimonthly, 1868--. Supplement: AM + R: Angewandte Mess- und Regeltechnik, semimonthly, 1961--.
5. Automatisierung: Europäische Industrie-Zeitschrift für das gesamte Gebiet der Automatisierung. Hsidelberg. Monthly, 1956--. Special section, Angewandte Elektronik.
6. Regelungstechnische Praxis: Steuern, Regeln und Automatisieren in Betrieb. Munich. Quarterly, 1959--.
7. Automatisme a l'usine et au bureau. Dunod. About monthly, 1956--.
8. Regelungstechnik: Zeitschrift für Steuern, Regeln und Automatisieren. Munich. Monthly, 1953--. Bibliographies.
9. Automazione e strumentazione. Milan. Monthly, 1953--. (Formerly Misure e regolazione).
10. Kybernetik. Springer. About annual, 1963--.

2.9:P250D Automation and Process Control.

1. Jido Seigyo: Automatic Control. Univ. Tokyo. Bimonthly, 1955--. Summaries in English.
2. Pomiary Automatyka Kontrola. Warsaw. Monthly, 1955--.
3. Tzu tung hua: Automation. Peking. Bimonthly. In Chinese; some translations from Russian.
4. Archiwum Automatyki i Telemechaniki. Bimonthly, 1956--. Warsaw. (Summaries in English).
5. Izvestiya Akademii Nauk: Otdelenie tekhnicheskii Nauk. A. Tekhnicheskaya kibernetika: Avtomatika, telemekhanika, radiotekhnika i elektronika. Nauk. Bimonthly, 1963--. Frequent bibliographies. Name was Avtomatika i telemekhanika, 1936-42, 1947-62; translated as Automation and Remote Control, ISA, 1958--.
6. Avtomatika. Bimonthly, 1960--. Ljubljana, Yugoslavia.
7. Otomeeshon: Automation. Tokyo. Monthly, 1956--; abstract section. Japanese language.

8. Mekhanizatsiya i avtomatzatsiya proizvodstva. Moscow. Monthly, 1959--. (Title was Mekhanizatsiya trudoemkykh i tyazhelykh rabot, 1947-58).

2.9:P300A Aerospace Sciences.

1. Missiles and Rockets. Washington. Weekly, 1955--.
2. Astronautics and Aerospace Engineering. AIAA. Monthly, 1963--. Merger of Aerospace Engineering (formerly Aeronautical Engineering, 1942--) with IAS News, 1963.
3. Progress in Aeronautical Sciences. Pergamon. Annual, 1961--.
4. Aircraft Engineering. London. Monthly, 1929--.
5. Planetary and Space Science. Pergamon. Monthly, 1953--.
6. Aerospace Medicine. New York. Monthly, 1930--; current bibliographies.
7. Progress in Astronautics and Aeronautics. AIAA and Academic Press. Irregular, 1960--. (Title was Progress in Astronautics and Rocketry, v. 1-8). Volumes and editors: 1. Solid Propellant Rocket Research (M. Summerfield), 1960; 692 pp. 2. Liquid Rockets and Propellants (L. E. Bollinger et al.), 1960; 682 pp. 3. Energy Conversion for Space Power (N. W. Snyder), 1961; 779 pp. 4. Space Power Systems (N. W. Snyder), 1961; 632 pp. 5. Electrostatic Propulsion (D. B. Langmuir et al.), 1961; 579 pp. 6. Detonation and Two-Phase Flow (S. S. Penner et al.), 1962; 368 pp. 7. Hypersonic Flow Research (F. R. Riddell), 1962; 758 pp. 8. Guidance and Control (R. E. Roberson et al.), 1962; 670 pp. 9. Electric Propulsion Development (E. Stuhlinger), 1963; 748 pp. 10. Technology of Lunar Exploration. (C. I. Cummings et al.), 1963; 989 pp.
8. Advances in Space Science and Technology. Academic Press. Annual, 1959--. Supplement: Oswald H. Lange and R. J. Stein, Space Carrier Vehicles, 1963; 350 pp.
9. Space/Aeronautics. New York. Monthly, 1944--.
10. Advances in the Astronautical Sciences. AAS. Irregular, 1949--.
11. Proceedings of the National Telemetering Conference. IAS. Annual, 1950--.
12. AIAA Journal. Monthly, 1963--. (Merger of ARS Journal and Journal of the Aerospace Sciences). Current bibliography, Technical

2.9:P300A (Cont.)

Literature Digest. Russian supplement: translated papers, and bibliography of translated items.

13. Reports (1915-56), Technical Memoranda (translations, 1921-56), and Technical Notes (1915-56). NACA. Irregular. Preceded NASA publications (1957--).
14. ARS Journal. Monthly, 1930-- (original title Jet Propulsion). Merged, 1963, with Journal of the Aerospace Sciences in AIAA Journal.
15. Navigation. Los Angeles. Quarterly, 1946--.
16. Journal of the Astronautical Sciences. AAS. Quarterly, 1953--.

2.9:P300B Aerospace Sciences.

1. Journal of the RAeS. Monthly, 1897--.
2. Spaceflight: Magazine of Aerospace Science and Technology. London. Bimonthly, 1959--.
3. Journal of the BIS. Bimonthly, 1934--; abstract section, about 2000 abstracts per year.

2.9:P300C Aerospace Sciences.

1. l'Homme et l'Espace: Actualité spatiale. Lausanne. Monthly, 1961--.
2. COSPAR Information Bulletin. Paris. Irregular, 1960--.
3. Recherche aerospatiale. ONERA. Bimonthly, 1948--. (Name changed, 1963, from Recherche aeronautique).
4. Astronautica Acta. IAF. Irregular, 1955--.
5. Rivista aeronautica-astronautica-missilistica. Rome. Monthly, 1925--.
6. Astronautik. Stockholm. Irregular, 1960--.
7. Luftfahrttechnik-Raumfahrttechnik. VDI. Monthly, 1955--.

2.9:P300D Aerospace Sciences.

1. Transactions of the JSASS. Tokyo. Irregular. 1958--. In English. Journal of the JSASS. Tokyo. Monthly, 1953--. In Japanese.

2.9:P300D (Cont.)

2. Voprosy Raketnoi Tekhniki. Monthly, 1951--. (Aerospace engineering).
3. Isskustvennie sputniki zemli. Nauk. Irregular, 1958--. Translated as Artificial Earth Satellites. Consultants, 1958--.

2.9:P400 Mathematics and its Applications.

1. Journal of SIAM. Quarterly, 1953--. Series A. Control. Quarterly, 1962. SIAM Review. Quarterly, 1959--.
2. Prikladnaya matematika i mekhanika. Nauk. Bimonthly, 1933--. Translated as Journal of Applied Mathematics and Mechanics, Pergamon, 1958--.
3. Journal of Mathematical Physics. AIP. Monthly, 1960--.
4. Zeitschrift für angewandte Mathematik und Mechanik. Akademie. Monthly, 1921--.
5. Quarterly of Applied Mathematics. Brown Univ., 1943--.
6. Bulletin of the AMaS. Bimonthly, 1895--. Transactions, monthly, 1912--. Proceedings, bimonthly, 1950--. Notices, 7 issues per year, 1954--.
7. Zeitschrift für angewandte Mathematik und Physik ZAMP. Basel. Bi-monthly, 1950--. Papers in English, French or German.
8. Journal of Mathematical Analysis and Applications Academic Press, Bimonthly, 1958--.
9. Revue de mathématiques pures et appliquées. Bucharest. Quarterly, 1956--. Papers in French, English, Russian or German.
10. Mathematics of Computation. NAS-NRC. Quarterly, 1943--. (AMaS for NAS-NRC, 1962--.). (Available on Microcards, 1943-56).
11. Journal of Mathematics and Mechanics. Indiana. Irregular, 1952--. (Formerly Journal of Rational Mechanics and Analysis).
12. Journal of Mathematics and Physics. MIT. Quarterly, 1922--.

2.9:P450A Mechanics. Applied physics, engineering and mechanics have complex interrelations, all in turn related to the "mother of all sciences", mathematics. No fine distinctions are drawn in this classified arrangement; the subject index should be consulted.

1. Experimental Mechanics: Journal of the SESA. Monthly, 1961--.

2.9:PL450A (Cont.)

2. International Journal of Mechanical Sciences. Pergamon, 1959--.
3. Advances in Applied Mechanics. Academic Press. About biennial, 1948--. Supplement 1: L. Talbot, editor, Rarified Gas Dynamics, 1961; 748 pp. Supplement 2: J. A. Laurmann, Rarefied Gas Dynamics, 1963; (International Symposium on Rarefied Gas Dynamics).
4. Journal of the Mechanics and Physics of Solids. Pergamon. Quarterly, 1953--.

2.9:PL450B Mechanics.

1. Quarterly Journal of Mechanics and Applied Mathematics. Clarendon, 1948--.
2. Journal of Fluid Mechanics. Cambridge. Irregular, 1948--.

2.9:PL450C Mechanics.

1. Mecanique-Electricite. Paris. Monthly, 1917--. (Title formerly began Revue generale de---).
2. Pratique des industries mecaniques. Paris. Monthly, 1918-- (formerly Ouvrier moderne).
3. Journal de mecanique. Gauthier. Quarterly, 1962--.
4. SFM Bulletin. Quarterly, 1951--.
5. Anales de Mecanica y Electricidad. Madrid. Bimonthly, 1922--.
6. Werkstattstechnik und Maschinenbau: Zeitschrift für Fertigung im Maschinenbau, Apparatebau und Feinmechanik. VDI. Monthly, 1907--.
7. Feinwerktechnik: Zeitschrift für alle Gebiete der feinmechanischen Technik. VDI. Monthly, 1897-1944, 1949--(various titles).
8. Proceedings of the International Congress for Applied Mechanics, Irregular, 1924--. (10th Congress, 1960; Elsevier, 1962; 370 pp.).
9. Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete, Springer. Irregular, 1962--. (In German, English or French).

2.9:P450D Mechanics.

1. Proceedings of Vibration Problems. Warsaw. Quarterly, 1960--. (In English).
2. Archiwum Mechanika Stosowanej: Archives de Mecanique Appliquee. Warsaw. Bimonthly, 1949--. Papers may be in English, French or German.
3. Stanki i instrument. Moscow. Monthly, 1930--. Translated as Machines and Tooling, Production Engineering Research Assoc'n, Leicestershire, 1959--.
4. Revue de mecanique appliquee. Bucharest. Bimonthly, 1956--. (Papers in French, English, Russian or German).
5. Acta Mechanica Sinica. Peking. Quarterly, summaries in English or Russian.
6. Tohoku Daigaku Kosoku Rikigaku Kenkyujo Hokoku: Memoirs of the Institute of High Speed Mechanics. Sendai. Irregular. Summaries in English.
7. Kikai Shikenjo Shoho: Mechanical Laboratory Journal. Tokyo. Bi-monthly. Summaries in English.
8. Seimitsu Kikai: Journal of the Society of Precision Mechanics. Univ. Tokyo. Monthly, 1933--; includes a patent section. Summaries in English.
9. Kyushu Daigaku Oyo Rikigaku: Reports of RIAM. Irregular. Japanese language.
10. Monatsschrift für Feinmechanik und Optik. East Berlin. Monthly, 1884--. (Formerly Deutsche optische Wochenschrift)

2.9:P500 Electricity: General. Instrumentation is somewhat diluted in this kind of literature, but always present and seldom hard to find.

1. Electro-Technology: Electrical/Electronic Design Magazine. New York. Monthly, 1928--. (formerly Electrical Manufacturing)
2. Progress in Dielectrics. Annual. Wiley, 1959--.
3. EDN: Electrical Design News. Englewood, Colorado. Monthly, 1956--.
4. Elektrotehniski Vestnik: Electrotechnical Review. Ljubljana. Bimonthly, 1931--. In Serbian; English, German and French summaries.

5. Revue generale de l'electricite. Paris. Monthly, 1917--.
(Merger of Revue electrique and Lumiere electrique).
Cumulative (10-vol.) indexes.
6. Energija: Electric Power Research. Zagreb. Bimonthly, 1953--.
In Serbian; summaries in English.
7. Denki Shikenjo Iho: Electrotechnical Laboratory Bulletin. Tokyo.
Monthly. Abstract section includes patents.
8. Elektrotehnika u Industriji i Pogonu. Zagreb. Irregular, 1958--.
9. Wissenschaftliche Zeitschrift der Elektrotechnik. Akademische.
Quarterly, 1962--.
10. Direct Current: International Conversion Equipment Journal.
London. Monthly, 1952--.
11. Revue E: Electricite, Electrotechnique generale, Courants forts
et applications. Brussels. Quarterly, 1954--.
12. Elektrie. East Berlin. Monthly, 1947--(formerly Deutsche
Elektrotechnik).
13. Power Express. IPI. 10 issues per year, 1961--; about 500 trans-
lations or abstracts per year from Russian. (See also Auto-
mation Express, Electronics Express, Physics Express).
14. Elektrичество. Moscow. Monthly, 1880--. Translated as Electric
Technology USSR, Pergamon, 1960--.
15. Electrical Review. London. Weekly, 1872--. Patents section,
about 5000 per year.
16. Dielectrics. Heywood. Quarterly, 1963--.
17. Proceedings of the Symposium on Recent Developments in Network
Theory. Pergamon. Irregular, 1963--.
18. Proceedings of the Symposium on Precision Electrical Measurements.
Irregular, 1963--.

2.9:P530 Electricity: Society Journals.

1. Electrotechnical Journal of Japan: ETJ. IEE (Japan). Quarterly,
1957--; in English. Denki Gakkai Zasshi: Journal of the
IEE (Japan). Monthly, 1888--; abstract section includes
patents. Translated as Electrical Engineering in Japan.
IEEE. Monthly, 1963--.

2. Journal of the IEE. Monthly, 1955--, (Was part of the Proceedings, 1949-54). Proceedings of the IEE. 1872--. A. Power Engineering. Bimonthly. B. Electronic and Communication Engineering. Bimonthly. C. Monographs. Irregular. Supplement No. 3, Nondestructive Testing in Electrical Engineering, 1962; 256 pp.
3. Bulletin de la Societe royale belge des electriciens. Quarterly, 1883--.
4. Transactions of the IRE. Varying frequencies, 1913--. Divided, 1951, in separate Professional Group series, numbering 28 in 1962: Aerospace; Antennas; Audio; Automatic control; Bio-medical Electronics; Receivers; Broadcasting; Circuit Theory; Communications; Components; Education; Electron Devices; Computers; Management; Writing and Speech; Human Factors; Industrial Electronics; Information Theory; Instrumentation; Microwaves; Military Electronics; Nuclear Science; Product Engineering; Frequency Interference; Reliability; Space Electronics; Ultrasonics; Vehicular Communications. (IRE and AIEE merged, 1962, as IEEE).
5. Electrotechnology: Journal of the SEE. Bimonthly, 1958--; bibliographies. (Formerly Electrotechnics, 1926-57).
6. Bulletin de la ASE. Biweekly, 1910--. Abstract section, about 2000 per year.
7. VDE Fachberichte. Annual, 1937--. I. Starkstromtechnik. Themengruppen: Energieverteilung. Industrielle Elektrowärme. Umformung. Lastverteilung und Verbundbetrieb. Elektromaschinenbau und Antrieb. Elektrolichttechnik. II. Nachrichtentechnik.
8. EP: Electric Power. BEAMA. Monthly, 1963--.
9. Bulletin de la Societe française des electriciens. Malakoff. Monthly, 1884--.
10. Electricien. Paris. Monthly, 1881-1914, 1919--.
11. Transactions of the AIEE. Varying frequencies, 1884--. Divided, 1952--, to include: I. Communications and Electronics. II. Applications and Industry. III. Power Apparatus and Systems. (AIEE and IRE merged, 1962, as IEEE).
12. ETT: Elektroteknisk Tidsskrift. NEF. 32 issues per year, 1888--.
13. l'Elettrotecnica. AEI. Monthly, 1914--.

14. Denki Tsushin Gakkai Zasshi: Journal of the IECE. Tokyo. Monthly. Translated as Electronics and Communications in Japan. IEEE, 1963--.
15. ETZ: Elektrotechnische Zeitschrift. VDE. Weekly, 1880--. Divided, 1949, into editions A and B.

2.9:P570 Company Journals. Technology-conscious house organs and technical periodicals with a manufacturer's backing.

1. Mitsubishi Denki Laboratory Report. Mitsubishi Electric Co., Amagasuki, Quarterly, 1960--. Mitsubishi Denki Giho. In Japanese.
2. Revue Brown Boveri. Baden. Monthly, 1914--.
3. Funk-G. Rundschau. Felten. Irregular, 1927--.
4. Toshiba Rebyu: Toshiba Review. Tokyo. Monthly. Summaries in English. (Electricity).
5. AEG Mitteilungen. Irregular, 1911--. AEG Progress (English edition), 1925--. AEG Technische Jahresbericht. Annual, 1928--.
6. Westinghouse Engineer. Pittsburgh. Bimonthly, 1941--.
7. Ericsson Review. Stockholm. Quarterly, 1924--. Editions in English and Swedish. Ericsson Technics. Semiannual, 1933--.
8. Siemens Review. Quarterly, 1925--. English edition of Siemens-Zeitschrift, irregular, 1921--. Entwicklungsberichte Siemens. Irregular, 1938--; mainly reprints.
9. Furukawa Electric Review. Furukawa Electric Co., Ltd. Quarterly, 1956--. (In Japanese, English summaries).
10. Philips Research Reports. Eindhoven. Bimonthly, 1946--. Philips Technical Review. Monthly, 1940--. English, Dutch, French and German editions.

2.9:P600A Electronics: General.

1. Journal of the Electronics Division, ASQC. Irregular, 1962--. Milwaukee.
2. Proceedings of the EIA Conferences on Maintainability of Electronic Equipment. EIA and Reinhold. Irregular, 1958--.

3. Electronics Express. IPI. 10 issues per year, 1958--; about 500 translations or abstracts from Russian per year. (See also Automation Express; Physics Express; Power Express).
4. Progress in Semiconductors. Wiley. Annual, 1956--.
5. Electronic Industries, Chilton. Monthly, 1942--, Abstract section; Annual Directory and State-of-the-Art issue.
6. Solid State Design. Dedham, Mass. Monthly, 1960--.
7. Advances in Electronics and Electron Physics. Academic Press. About annual, 1948--. Supplement 1: Henry F. Ivey, Electroluminescence and Related Effects, 1963; 276 pp.
8. Solid State Electronics: An International Journal. Pergamon. Bimonthly, 1960--.
9. Electronic Design. New York. Biweekly, 1952--.
10. Semiconductor Products and Solid State Technology. New York. Monthly, 1958--.
11. Electronics. McGraw-Hill. Weekly, 1930--. Decennial indexes, 1930--. Annual Supplement: Electronics Buyers' Guide. Electronics Engineering Manual, selected reprints in occasional volumes.
12. Proceedings of the National Electronics Conference. AIEE. Annual, 1944--.
13. Microelectronics and Reliability. Pergamon. Quarterly, 1962--. (Name was Electronics Reliability and Miniaturization until 1964).

2.9:P600B Electronics: General.

1. Industrial Electronics. London. Monthly, 1963--. (Absorbed Electronic Technology, 1963).
2. Electronic Technology. London. Monthly, 1923--(formerly Wireless Engineer). Merged, 1963, with Industrial Electronics.

2.9:P600C Electronics: General.

1. Halbleiterprobleme in Referate des Halbleiterausschusses der VDPG. Vieweg. Nearly annual, 1954--.

2.9:P600C (Cont.)

2. Elettronica. Turin. Bimonthly, 1952--. Merger of Televisione italiana and Elettronica e televisione.
3. Revista de informacion electronica. Madrid. Monthly, 1958--.
4. Electronique et l'automatisme: Techniques nouvelles appliquees a l'industrie. Paris. 10 issues per year, 1960--.
5. Revue MBLE. Quarterly, 1958--.
6. Electronic Applications. Philips. Quarterly, 1940--. English and Spanish editions.
7. Toute l'electronique. Paris. Monthly, 1934--. (Formerly Toute la radio).
8. Elektronik: Fachzeitschrift für die gesamte elektronische Technik und ihre Nachbargebiete. Munich. Monthly, 1952--(1952-54 as a supplement in Funkschau).
9. Revue generale d'electronique. Paris. Monthly, 1947--.
10. Elektronische Rundschau. Berlin. Monthly, 1947--(formerly Funk und Ton).
11. Philips Technical Review. Philips. Monthly, 1939--. Editions in English, Dutch, French and German.

2.9:P600D Electronics: General.

1. Erekutoronikusu: Electronics. Tokyo. Monthly, 1956--.
2. Slaboproudny Obzor. Prague. Monthly, 1940--. (Semiconductors).
3. Denshi Kagaku: Electronic Science. Tokyo. 10 issues per year. Japanese language.
4. Przeglad Elektroniki: Electronics. Warsaw. Monthly, 1960--. (Papers sometimes in English).
5. Denshi kogyo: Electronician. Tokyo. Monthly, 1952--. Japanese language.

2.9:P700 Telecommunications: General. Interpreting telecommunications broadly, Sections P700-P730-P750-P770 include audio and video transmission, radar, and other ways of propagating signals. Overlap with electricity and electronics necessitated many arbitrary placement decisions; the subject index will help.

1. L'Onde electrique. Paris. Monthly, 1921--.
2. NTZ: Nachrichtentechnische Zeitschrift. Vieweg. Monthly, 1949--.
English edition: NTZ Communications Journal. Monthly, 1962--.
3. Review of the Electrical Communication Laboratory. Tokyo. Bi-monthly, 1953--.
4. GEC Journal of Science and Technology. 3 issues per year, 1934--.
GEC Telecommunications. Irregular, 1945--.
5. Telecommunication Journal. ITU. Monthly, 1934--. (Also French and Spanish editions). Name was Journal telegraphique, 1869-1933.
6. Bell System Technical Journal. Bimonthly, 1921--.
7. Western Union Technical Review. New York. Quarterly, 1947--.
8. Bell Laboratories Record. Monthly, 1922--.
9. Western Electric Engineer. New York. Quarterly, 1957--.
10. Dianxin Kexue: Science of Telecommunication. Peking. Monthly.
In Chinese; some translations from Russian.
11. Sdelovaci Technika. Prague. Monthly, 1953--. (Telecommunications).
12. Journal of the Institution of Telecommunication Engineers. New Delhi. Bimonthly, 1955--.
13. Science and Industry. Philips. Bimonthly, 1953--.
14. Microwave Research Institute Symposia Series. BPI. Irregular, 1952--.
15. Philips Telecommunication Review. Hilversum. Irregular, 1934--.
(formerly Communication News).).
16. G. W. A. Dummer and J. M. Robertson, European Miniature Electronic Components and Assemblies Data Annual. Pergamon, 1961--.
17. G. W. A. Dummer and J. M. Robertson, American Miniature and Microminiature Electronic Assemblies Data Annual. Pergamon, 1961--.
18. G. W. A. Dummer and J. M. Robertson, British Miniature Data Annuals.
I. Miniature and Microminiature Electronic Assemblies. II.

Electronic Components. III. Transistor Diode and Semiconductor Devices. Pergamon, 1961--.

2.9:P730 Telecommunications: Radio.

1. Marconi Review. Quarterly, 1938--.
2. Proceedings of the IRE. Monthly, 1913-62. (Abstract section discontinued, January 1963). (IRE and AIEE merged, 1962, as IEEE).
3. Journal of the Radio Research Laboratory. Tokyo. Bimonthly, 1954--. In English.
4. RCA Review. Quarterly, 1936--.
5. Elektrosvyaz. Monthly, 1929--. Moscow. Translation as Telecommunications (IEEE, 1957-62) joined with translation of Radiotekhnika as Telecommunications and Radio Engineering, IEEE. Monthly, 1963--.
6. Technische Mitteilungen PTT. Monthly, 1923--.
7. Dempa Kenkyujo Kiho: Radio Research Laboratory Review. Tokyo. Quarterly. Summaries in English.
8. Tijdschrift van het Nederlands Radiogenootschap. Delft. Bimonthly, 1937--.
9. Advances in Radio Research. Academic Press. Annual, 1962--.
10. Telefunken Zeitung. Berlin. Irregular, 1928--.
11. Central Radio Propagation Laboratory Ionospheric Predictions. NBS. Monthly, 1945--. (Formerly Basic Radio Propagation Predictions).
12. TELE: Meddelanden fran kungl. Telestyrelsen. Stockholm. Quarterly, 1950--.
13. Funk-Technik. Berlin. Semimonthly, 1946--.
14. Rundfunktechnische Mitteilungen. Hamburg. Bimonthly, 1957--.
15. Hoso gijutsu: Broadcast Engineering. Tokyo. Monthly. Japanese language.
16. Proceedings of the IRE (Australia). Sydney. Monthly, 1940--.
17. Post Office Electrical Engineers' Journal. Quarterly, 1908--.

18. Radio Science (formerly Section D. Radio Propagation of the NBS Journal of Research). NBS, Washington. Monthly, 1964--.

2.9:P750 Telecommunications: Electronic Aspects.

1. Radiotekhnika: Nauchnotekhnicheskii i teoreticheskii zhurnal (formerly Radiotekhnika i elektronika). Moscow. Monthly, 1946--. Translated as Radio Engineering and Electronic Physics, IEEE, 1957-62; joined with translation of Elektrosvyaz as Telecommunications and Radio Engineering, IEEE. Monthly, 1963--.
2. Alta frequenza: Rivista di elettronica e telecomunicazioni. AEI. Monthly, 1932--.
3. Radio and Electronic Engineer. BIRE. Monthly, 1939--. (Name was Journal of the BIRE, 1939-62).
4. Wireless World: Electronics, Radio, Television. London. Monthly, 1911--.
5. British Communications and Electronics. Heywood. Monthly, 1954--.
6. Revue HF: Electronique-Telecommunications. Brussels, Quarterly, 1949--.
7. National Telemetering Conference. IEEE. Annual, 1954--.
8. Radio-electronics. New York, Monthly, 1954--. (formerly Radio-electronic Engineering).

2.9:P770 Telecommunications: Devices; Frequencies.

1. Microwave Journal. Dedham, Mass. Monthly, 1958--.
2. Hochfrequenztechnik und Elektroakustik: Jahrbuch der drahtlosen Telegraphie und Telephonie. Akademische. Bimonthly, 1907--.
3. Point to Point Telecommunications: Journal for the Telecommunications Engineer. Marconi. Three issues per year, 1959--.
4. Frequency: Generation, Selection, Control, Measurement. Brookline, Mass. Bimonthly, 1962--.
5. Short Wave Magazine. London. Monthly, 1943--.
6. British Transistor Diode and Semiconductor Devices Data Annual. Pergamon, 1962--.

2.9:P770 (Cont.)

7. Proceedings of the MRI Symposia Series. Wiley. Annual, 1952--.
8. Cables et transmissions. SOTELEC. Quarterly, 1947--.
9. RRE Journal. Irregular, 1937--. (Title was TRE Journal, 1937-53).
10. Frequenz: Zeitschrift für Schwingungs-und Schwachstromtechnik. Berlin. Monthly, 1947--.
11. Microwave Tube Characteristics Tabulation. Semiannual. Semiconductor, Diode and Rectifier Characteristics Tabulation. Semiannual. Transistor Characteristics Tabulation. Quarterly. DATA, 1956--.
12. Festkörperprobleme. Vieweg. About annual, 1954--. (Title was Halbleiterprobleme, 1954-1961). (Semiconductors).

2.9:P800 Heat; Temperature; Cryoscopy. Temperature measurement over the entire known range is included. In temperature control there is some overlap with 2.3:1370, Process Control. The word Cryoscopy is not rigidly interpreted; here it means from 0°K. to about liquid air temperature.

1. International Journal of Heat and Mass Transfer. Pergamon. Bimonthly, 1960--. Bibliographies.
2. Revue generale de thermique. Paris. Monthly, 1962--. (Merger of Chaleur et industrie and Flamme et thermique).
3. Combustion. New York. Monthly, 1929--. (Combustion of 1910-29 took the name Engineering and Finance from 1929, ceding the old title to the new journal).
4. Varme: Dansk tidsskrift for Varme--, Ventilations-of Sanitetsteknik. Copenhagen. Bimonthly, 1936--.
5. Advances in Cryogenic Engineering: Proceedings of the Cryogenic Engineering Conference. Plenum. Annual, 1954--.
6. Teplofizika vysokikh temperatur. Nauk. Bimonthly, 1963--. (High temperature thermodynamics, rocket power, atomic power).
7. Communications from the Kammerlingh Onnes Laboratory of the University of Leiden. Irregular, 1885--.
8. Teionkagaku; Butsuri Hen: Cryoscopy. A. Physical Sciences. B. Life Sciences. Hokkaido. Irregular. Summaries in English.
9. Cryogenics: International Journal of Low Temperature Engineering and Research. Heywood. Quarterly, 1961--.

10. Progress in Cryogenics. Academic Press. Annual, 1959--.
11. Revue des hautes temperatures et des refractaires. Masson. Quarterly, 1964--.

2.9:P830A Light; Optics; Photography. Association of P830 and P870 with P800 is an obeisance to the old "Heat, Light and Sound" subdivision of physics in college textbooks. The arrangement is not a searching aid but is not expected to be a hindrance either.

1. Journal of the OSA. Monthly, 1917--. Cumulative index, 1917-50.
2. Photogrammetric Engineering. ASP. Quarterly, 1934--.
3. Illuminating Engineering. New York. Monthly, 1907--.
4. Radiation Research. Academic Press. Monthly, 1954--.
5. Applied Spectroscopy. SAS. Quarterly, 1947--.
6. Transactions of the AMiS. Quarterly, 1878--.
7. Advances in Spectroscopy. Interscience. Irregular, 1959--. (v. 1, 1959, 371 pp.; v. 2, 1962, 428 pp.).
8. Spectrochimica Acta. Pergamon. Monthly, 1945--.
9. Applied Optics. OSA. Monthly, 1962--.
10. SMPTE Journal. Monthly, 1916--.
11. Astrophysical Journal: International Review of Spectroscopy and Astronomical Physics. Chicago. Bimonthly, 1895--. Supplement, 1954--.
12. Photographic Science and Engineering. SPSE. Quarterly, 1950--. (Title changed from Photographic Engineering, 1957).
13. Infrared Physics: International Research Journal. Pergamon. Quarterly, 1961--.
14. Journal of Ultrastructure Research. Academic Press. Monthly, 1959--.

2.9P830B Light; Optics; Photography.

1. Optica Acta: International Journal of Optics. London. Irregular, 1954--.

2.9:P830B (Cont.)

2. Radiography. London. Monthly, 1935--. (Supplement in British Journal of Radiography, 1935-53).
3. Journal of the RMiS. Quarterly, 1878--.
4. Transactions of the IES. Monthly, 1936--.
5. Hilger Journal. London. Irregular, 1949--.
6. Television Society Journal. London. Quarterly, 1928--.
7. Journal of Photographic Science. RPS. Bimonthly. 1953--.
Superseded Photographic Journal. B. Scientific and Technical Photography, 1948-52.
8. Photographic Journal. RPS. Monthly, 1853--.
9. Photoelectric and Spectrometry Group Bulletin. Cambridge (England). Irregular, 1958--.
10. Proceedings of the International Symposium on Photoelasticity. Pergamon. Irregular, 1963--.

2.9:P830C Light; Optics; Photography.

1. Proceedings of the ICI. Irregular (biennial to quinquennial), 1913--.
2. Optiknaemnden. Handlingar. Stockholm. Irregular, 1950--.
3. Science et industries photographiques. Paris. Monthly, 1921--.
4. Mikrokosmos: Zeitschrift für angewandte Mikroskopie. Stuttgart. Monthly, 1907--.
5. Bulletin de microscopie appliquée. Paris. Bimonthly, 1950--;
abstract section, about 2400 abstracts per year.
6. Zeitschrift für wissenschaftliche Photographie Photophysik und Photochemie. Barth. Irregular, 1903--.
7. Atti della Fondazione Giorgio Rondhi e Contributi dell 'Istituto Nazionale di Ottica. Florence. Bimonthly, 1946--.
8. Zeitschrift für wissenschaftliche Mikroskopie und mikroskopische Technik. Hirzel. Irregular, 1894--.
9. Journal de microscopie. Paris. Quarterly, 1962--.

2.9:P830C (Cont.)

10. Television. Paris. Monthly, 1939--.
11. Lichttechnik. Berlin. Monthly, 1949--.
12. Strahlentherapie. Berlin. Monthly, 1912--.
13. Optik: Zeitschrift für das gesamte Gebiet der wissenschaftlichen und angewandten Optik. Stuttgart. Monthly, 1946--.
14. Revue d'optique theorique et instrumentale. Paris. Monthly, 1922--. Abstract section.
15. Photo-Technik und - Wirtschaft. Berlin. Monthly, 1952--.
16. Zeiss Mitteilungen über Fortschritte der technischen Optik. Stuttgart. Irregular, 1961--. Zeiss Information (new title, 1963, of Zeiss Werkzeitschrift). Quarterly, 1953--.
17. Progress in Optics. Amsterdam. Irregular, 1960--.

2.9:P830D Light; Optics; Photography.

1. Optika i spektroskopiya. Moscow. Monthly, 1957--. Translated as Optics and Spectroscopy, OSA, 1959--.
2. Kristallografia. Nauk. Bimonthly, 1956--. Translated as Soviet Physics; Crystallography. AIP, 1957--.
3. Journal of Electron Microscopy. SEM. 3 issues per year, 1953--.

2.9:P870 Acoustics; Ultrasonics.

1. Journal of the AES. Quarterly, 1953--.
2. Noise Control. AIP. Bimonthly, 1955-61.
3. Documentazione di ultracustica. Rome. Annual, 1954--. (Ultrasonics bibliographies).
4. Ultrasonic News. Stamford, Conn. Quarterly, 1957--.
5. Acustica: International Journal of Acoustics (British, German, French). Hirzel. Bimonthly, 1951--. Supplement: Akustische Beihefte.
6. Ultrasonics: Principles and Practice of Ultrasonics and Allied Technology, London. Quarterly, 1963--.

2.9:P870 (Cont.)

7. Akusticheskii Zhurnal. Nauk. Quarterly, 1955--. Translated as Soviet Physics: Acoustics. AIP, 1956--.
8. Sound: Its Uses and Control. AcSA. Bimonthly, 1962--.
9. Journal of the AcSA. AIP. Monthly, 1929--.
10. Nihon Onkyo Gakkai-shi, Tokyo. Quarterly. Summaries in English; abstracts; bibliographies. (Acoustics).
11. Journal of Sound and Vibration. Academic Press. Quarterly, 1964--.

2.9:P900A Atomic and Nuclear Energy.

1. Nuclear Safety. AEC. Quarterly, 1960--.
2. Progress in Nuclear Physics. Pergamon. About annual, 1950--.
3. International Journal of Applied Radiation and Isotopes. Pergamon. Monthly, 1950--.
4. Radiochimica Acta. Academic Press. Irregular, 1963--.
5. Nucleonics. McGraw-Hill. Monthly, 1947--.
6. Bettis Technical Review: Reactor Technology. AEC. Irregular, 1957--.
7. Radiation Research. Academic Press. Bimonthly, 1954--. Supplements 1 and 2: Proceedings of the International Congress of Radiation Research (1958 and 1959), 1959 and 1960; 582 & 685 pp.
8. Journal of Nuclear Energy. Pergamon, 1954--. A and B: Reactor Science and Technology, monthly. C: Plasma Physics; Accelerators; Thermonuclear Research, bimonthly.
9. Progress in Nuclear Energy. Pergamon. Irregular, 1956--. In 12 series: I. Physics and Mathematics. II. Reactors. III. Process Chemistry. IV. Technology, Engineering and Safety. V. Metallurgy and Fuels. VI. Biological Sciences. VII. Medical Sciences. VIII. Economics. IX. Analytical Chemistry. X. Law and Administration. XI. Plasma Physics and Thermonuclear Research. XII. Health Physics.
10. Nuclear Science and Engineering. New York. Monthly, 1956--.
11. Power Reactor Technology. AEC. Quarterly, 1958--.
12. Plasma Physics and Thermonuclear Research. Macmillan. Irregular, 1962--.

2.9:P900B Atomic and Nuclear Energy.

1. Nuclear Engineering. London. Monthly, 1956--.
2. Molecular Physics. London. Bimonthly, 1958--.
3. Journal of the BNES. Quarterly, 1962--.
4. Nuclear Power: Reactors, Materials, Instrumentation, Processes, Irradiation. London. Monthly, 1956--.
5. Proceedings of the Symposium on Neutron Detection, Dosimetry and Standardization. IAEA. Irregular, 1963--.
6. Proceedings of the 1st International Conference on Paramagnetic Resonance. Academic Press. Irregular, 1963--. (First issue, 921 pp. in 2 v.).

2.9:P900C Atomic and Nuclear Energy.

1. Journal of Nuclear Materials. Amsterdam. Irregular, 1959--. English, French or German; summaries in Russian.
2. Energie nucleaire. Soprodoc. Quarterly, 1956--.
3. List of Bibliographies on Nuclear Energy, 1960--. List of Periodicals in the Field of Nuclear Energy, 1961--. List of References on Nuclear Energy, 1959--. IAEA. Irregular (up to semimonthly).
4. Beiträge aus der Plasmaphysik. Akademie. Quarterly, 1961--.
5. Nuclear Instruments and Methods: Accelerators, Instrumentation and Techniques in Nuclear Physics. Amsterdam. Monthly, 1957--.
6. Atomic Energy Review. IAEA. Irregular, 1963--.
7. Nukleonik. Springer. Bimonthly, 1959--. Some papers in English.
8. Atom und Strom. Frankfurt. Monthly, 1955--. (Supplement to Elektrizitätswirtschaft).
9. Nuclear Physics. Amsterdam. Biweekly, 1957--. Papers in English, French or German.
10. Atomkernenergie: Ihre Anwendung in Wissenschaft, Technik und Wirtschaft. Munich. Monthly, 1956--.
11. Nuclear Fusion: Journal of Plasma Physics and Thermonuclear Fusion. IAEA. Quarterly, 1961--. (English, French, Russian and Spanish).

2.9:P900C (Cont.)

12. Bulletin d'informations scientifiques et techniques du commissariat à l'énergie atomique. Dunod. Monthly, 1958--.
13. Neue Physik: Zeitschrift für die Gebiete der Atom- und Strahlungsphysik. Vienna. Irregular, 1959--.
14. Energia nucleare: Rivista mensile edita dal CISE. Monthly, 1954--.
15. Kerntechnik: Isotopentechnik und - Chemie. Munich. Monthly, 1959--.
16. Energie nucleaire: Revue de physique et de chimie nucleaires et de génie atomique. Paris. Semiquarterly, 1959--.

2.9:P900D Atomic and Nuclear Energy.

1. Nihon Genshiryoku Kenyujo Chosa Hokoku Tokyo. Irregular. Summaries in English. (Atomic energy reports).
2. Bulletin of the INSBK. Irregular, 1951--. Mostly English; summaries in French and Russian.
3. Polski Przeglad Radiologii i Medycyny Nuklearnej. Warsaw. Bimonthly, 1937--. Summaries in English.
4. Atomnaya energiya. Moscow, 1957--. Translated as Soviet Journal of Atomic Energy. Consultants, 1958--. (formerly called Atomic Energy (USSR)). Selected translations also, in German, in Kernenergie.
5. Nukleonika. Warsaw. Bimonthly, 1956--. Translated into English in Poland as Nukleonika, AEC and OTS, 1956--.
6. Kernenergie: Zeitschrift für Kernforschung und Kerntechnik. East Berlin. Monthly, 1958--. Includes selected translations from Atomnaya energiya.
7. Nihon Genshiryoku Gakkai shi: Journal of the AES (Japan). Monthly, 1959--. English summaries.

2.9:P1000A Geophysics: General.

1. Geophysics. Tulsa. Bimonthly, 1936--. Abstract section (patents added, 1939).
2. Transactions of the AGU, NRC. Quarterly, 1920--. Also: Journal of Geophysical Research, semimonthly, 1920--. Reviews of Geophysics, quarterly, 1963--. Geophysical Monograph Series, irregular, 1956--.

2.9:P1000A (Cont.)

3. Advances in Geophysics. Irregular (1 to 3 years), 1952--. U. S. Weather Bureau and Academic Press.
4. Reviews of Geophysics. AGU. Quarterly, 1963--.
5. Journal of Geophysical Research. Washington. Quarterly, 1896--. (Formerly Terrestrial Magnetism and Atmospheric Electricity).

2.9:P1000B Geophysics: General.

1. Geophysical Journal of the RAS. Quarterly, 1957--.

2.9:P1000C Geophysics: General.

1. Bollettino di geofisica teorica ed applicata. Trieste. Quarterly, 1959--.
2. Geofisica pura e applicata. Milan. 3 issues per year, 1910--.
3. Arkiv för geofysik. Stockholm. Irregular, 1950--.
4. Geophysica. Helsinki. Irregular, 1935--. Series: General Geophysics and Meteorology. Papers in English or German.
5. Annales de geophysique. CNRS. Irregular, 1944--.
6. Tellus: Journal of Geophysics. Stockholm. Quarterly, 1949--. Papers in English, French or German.
7. Annali di geofisica. Rome. Quarterly, 1948--.
8. Geofysiske publikasjoner. Oslo. Irregular, 1920--.
9. Beiträge zur angewandten Geophysik (Gerlands). Leipzig. Irregular, 1930--. Supplements: Ergänzungshefte für angewandte Geophysik und Ergebnisse der Kosmischen Physik.

2.9:P1000D Geophysics: General.

1. Geofizikalni Sbornik. CAV. Irregular, 1953--.
2. Anales del Instituto de Geofisica. Mexico City. Annual, 1955--.
3. Studia Geophysica et Geodaetica. CAV. Quarterly, 1957--. Papers in English, German or Russian.
4. Acta Geophysica Sinica. Peking. Semianual. Summaries in English or Russian.

2.9:P1000D (Cont.)

5. Zhurnal geofiziki. Moscow. Irregular, 1924--. (Title was Zhurnal geofiziki i meteorologii, 1924-29).
6. Acta Geodetica et Cartographica Sinica. Peking. Quarterly. Summaries in Russian.
7. Trudy Geofizicheskogo Instituta. Nauk. Irregular, 1948--.
8. Acta Physica Polonica. Warsaw. Irregular, 1941--. Papers may be in English, German or French. Supplement, irregular.
9. Przeglad Geofizyczny. Warsaw. Quarterly, 1956--. Summaries in English.
10. Doklady: Earth Sciences Sections. See Doklady in 2.9:P1600.

2.9:P1050 Geophysics: Special Topics.

1. Jishin. SSJ. Quarterly. Summaries in English. (Seismology).
2. Journal of Atmospheric Sciences. AMeS. Bimonthly, 1944--. (Formerly Journal of Meteorology).
3. International Geology Review. AGI. Monthly, 1959--. Translations from foreign languages, chiefly Chinese, Japanese and Russian.
4. Kenshin jiho: Quarterly Review of Seismology. Tokyo. Summaries in English.
5. Geochimica et Cosmochimica Acta. Pergamon. Bimonthly, 1951--.
6. Nihon Kaiyo Gakkai-shi. Tokyo. Quarterly. Summaries in English. (Oceanography).
7. Daigaku Chishin Kenkyuho Iho. Tokyo. Bimonthly. Summaries and some papers in English. (Seismology).
8. Quarterly Journal of the RMS, 1871--.
9. Acta Meteorologica Sinica. Peking. Quarterly. Summaries in English or Russian.
10. Journal of Atmospheric and Terrestrial Physics. Pergamon. Monthly, 1939--.
11. Zeitschrift fur Meteorologie. Akademie. Monthly, 1947--.
12. Bulletin of the SSA. Quarterly, 1911--.

13. Oceanologica et Limnologica Sinica. Peking. Semi-annual.
Summaries in English or Russian.
14. Diquiwuli Kantan: Geophysical Surveying. Peking. Irregular.
In Chinese; some translations from Russian.
15. Kisho Shushi: Meteorology. Tokyo. Bimonthly. Summaries in English.
16. Indian Journal of Meteorology and Geophysics. New Delhi. Quarterly, 1950--.
17. Kenkyu Jiho: Journal of Meteorological Research. Tokyo. Monthly.
Kishochō Iho: Memoirs. Irregular. Summaries in English.
18. Izvestiya AN SSSR: Otdelenie geologicheskie. Nauk. Monthly, 1937--. Translated as Izvestiya of the Academy of Sciences of the USSR, Geologic Series. NAS-NRC for AGI. Monthly.
19. Journal de mecanique et physique de l'atmosphere. Paris.
Quarterly, 1949--) formerly Journal scientifique de meteorologie.

2.9:P1100A Physics: General. The boundary between "general" and "applied" physics is fuzzy; the distinction is mainly a convenience for keeping groups of entries down to manageable size.

1. Physical Review. AIP. Semimonthly, 1893--; weekly, 1964--.
Cumulative indexes, 1893-1920, 1921-50; Author index, 1956-60. Physical Review Letters. Semimonthly, 1955--.
2. Brandeis University Summer Institute Lectures in Theoretical Physics. Benjamin. Annual, 1960--. (1962 Lectures in 3 v.): 1. Elementary Particle Physics. 2. Astrophysics and the Many-Body Problem. 3. Statistical Physics.
3. American Journal of Physics. AIP. Monthly, 1933--.
4. Reviews of Modern Physics. AIP. Quarterly, 1929--.
5. Annals of Physics. Academic Press. Monthly, 1957--.

2.9:P1100B Physics: General.

1. Proceedings of the Physical Society. London. Monthly, 1874--.
2. Philosophical Magazine. London. Monthly, 1798--.

2.9:P1100B (Cont.)

3. Canadian Journal of Physics. Ottawa. Monthly, 1929--.
4. Journal of the Physics and Chemistry of Solids. Pergamon. Monthly, 1962--. Letters section: Solid State Communications. Monthly, 1963--.
5. Physics of Thin Films: Advances in Research and Development. Academic Press. Annual, 1963--.

2.9:P1100C Physics: General.

1. Nederlands Tijdschrift voor Natuurkunde. Utrecht. Monthly, 1934--.
2. Fra Fysikkens Verden. NFS. Quarterly, 1939--.
3. Physics Letters. Amsterdam. Monthly, 1962--.
4. Arkiv för fysik. Stockholm. Monthly, 1949--.
5. Zeitschrift für Astrophysik. DPG. Irregular, 1930--.
6. Annalen der Physik. Barth. Irregular, 1799--. Beiblätter (with abstracts), 1877-1919, merged with Physikalische Berichte, 1920.
7. Zeitschrift für Physik. DPG. Irregular, 1920--.
8. Annales de physique. Paris. Monthly, 1815--. (Separated, 1915, from Annales de chimie et de physique, 1815-1914).
9. Physikalische Blätter. VDPG. Monthly, 1945--. Supplement, Physikalische Abhandlungen, Monthly, 1950--.
10. Cahiers de physique: Theorie, syntheses et mises au point. Paris. Monthly, 1947--.
11. Physica. Utrecht. Monthly, 1933--.
12. Journal de physique. Gauthier. Monthly, 1872--. Cumulative index, 1872-1901. (et le radium dropped from title, 1963).

2.9:P1100D Physics: General.

1. Uspekhi fizicheskikh nauk. Moscow. Monthly, 1938--. Translated as Soviet Physics: Uspekhi. AIP, 1957--.
2. Fizika tverdogo tela. Nauk. Monthly, 1959--. Translated as Soviet Physics: Solid State. AIP, 1959--.

2.9:P1100D (Cont.)

3. Zhurnal eksperimental'noi i teoreticheskoi fiziki. Nauk. Monthly, 1943--. (Formerly Fizicheskii Zhurnal. A.). Translated as Soviet Physics: JETP. AIP, 1955--.
4. Czechoslovak Journal of Physics. CAV. Irregular, 1951--.
5. Soviet Physics: Doklady. See Doklady in 2.9:P1600.
6. Fortschritte der Phyik. East Berlin. Monthly, 1953--.
7. Nihon Butsuri Gakkaishi: Journal of PS (Japan). Monthly, 1946--. Japanese language. (Physics).

2.9:P1150A Physics: Applied.

1. Physics of Fluids. AIP. Monthly, 1958--.
2. Journal of Applied Physics. AIP. Monthly, 1930--. Absorbed Journal of Rheology, 1933.
3. Solid State Physics. Academic Press. About annual, 1955--. Supplements: I. T.P. Das and E. L. Hahn, Nuclear Quadrupole Resonance Spectrography, 1958; 223 pp. II. Wm. Low, Paramagnetic Resonance in Solids, 1960; 212 pp. III. A. A. Maradudin, E. W. Montroll and G. H. Weiss, Theory of Lattice Dynamics in the Harmonic Approximation, 1963; 325 pp. IV. Albert C. Beer, Galvanomagnetic Effects in Semiconductors, 1963; 250 pp.
4. APL Technical Digest. Bimonthly, 1961--.
5. Sperryscope. Sperry. Quarterly, 1941--. (Also Sperry Engineering Review).
6. Applied Physics Letters. AIP. Semimonthly, 1962--.
7. Physics Express. IPI. 10 issues per year, 1958--; about 500 translations and abstracts per year from Russian. (See also Automation Express; Electronics Express; Power Express).
8. Journal of Sound and Vibration. Academic Press. Quarterly, 1964--.

2.9:P1150B Physics: Applied.

1. British Journal of Applied Physics. IP. Monthly, 1950--.
2. Notes on Applied Science. NPL. Irregular, 1951--. Includes instrumentation.

2.9:P1150C Physics: Applied.

1. Philips Research Reports: Journal of Theoretical and Experimental Research in Physics, Chemistry and Allied Fields. Philips. Bimonthly, 1946--.
2. Nuovo cimento. SIF. Semimonthly, 1855--. Papers largely in English; Italian, French, Spanish and German also accepted. Supplement, irregular, carries conference proceedings and special contributions.
3. Physik der kondensierten Materie. Springer. Irregular, 1962--. (German, French or English).
4. Biophysik. Springer. Irregular, 1963--.
5. Zeitschrift für angewandte Physik. Springer. Monthly, 1948--.
6. Journal of Applied Mathematics and Physics. Basel. Bimonthly, 1950--. (Titles also in French and German).
7. Physica Status Solidi. Akademie. Irregular, 1961--. (German or English).

2.9P1150D Physics: Applied.

1. Japanese Journal of Applied Physics. Tokyo. Monthly, 1962--. In English.
2. Oyo butsuri: Journal of Applied Physics. Tokyo. Irregular. Summaries in English.
3. Experimentelle Technik der Physik. East Berlin. Bimonthly, 1953--.
4. Zhurnal tekhnicheskoi fiziki. Moscow. Monthly, 1931--. Translated as Soviet Physics: Technical Physics. AIP, 1956--.
5. Indian Journal of Pure and Applied Physics. Pergamon. Monthly, 1963--.

2.9:P1200A Engineering. The distinction between "engineering" and "applied physics" is artificial and may blur at times, but is not difficult. As drawn here, it is much like the difference between laboratory scale and plant scale operations in chemical research and industry.

1. SAE Journal. Monthly, 1917--.
2. Solar Energy: Journal of Solar Energy Science and Engineering. Tempe, Ariz. Quarterly, 1957--. Sun at Work. Tempe, Ariz. Quarterly, 1956--.

2.9:P1200A (Cont.)

3. Product Engineering. McGraw-Hill. Monthly, 1930--.
4. Transactions of the AIMMEE. Varying frequencies, 1871--. Divided, 1950, into: Journal of Metals, Journal of Petroleum Technology, Mining Engineering. (Became AIMMPE, 1956).
5. Bulletin of Research. UL. Irregular, 1937--.
6. Vacuum: International Journal and Abstracting Service for Vacuum Science and Technology. Pergamon. Monthly, 1951--. Abstract section.
7. American Machinist. McGraw-Hill. Biweekly, 1877--.
8. Transactions of the ASME. Monthly, 1880--. Divided, 1959, into:
A. Journal of Engineering for Power. B. Journal of Engineering for Industry. C. Journal of Heat Transfer. D. Journal of Basic Engineering. E. Journal of Applied Mechanics.
9. International Congress on Vacuum Techniques. ICVT and Pergamon. Annual, 1961--. Merged, 1961, with National Symposium on Vacuum Technology. AVS and Pergamon. Annual, 1954-60.
10. Textile Research Journal. TRI. Monthly, 1925--.
11. Refrigerating Engineering. ASRE. Monthly, 1923--. Successor to Transactions of the ASRE, 1905-14, and Journal of the ASRE, 1914-22.
12. SPeE Journal. Monthly, 1945--. SPeE Transactions. Quarter, 1961--.

2.9:P1200B Engineering.

1. Proceedings of the IME. Monthly, 1847--. Journal of the IME, 1939--. Cumulative index, 1847-1942.
2. Journal of the IE, 8 issues per year, 1929--. Transactions of the IE: Civil Engineering and Electrical and Mechanical Engineering, each semiannual, 1959--.
3. Canadian Journal of Technology. Ottawa. Monthly, 1944--.

2.9:P1200C Engineering.

1. Technische Mitteilungen Krupp. Essen. Irregular, 1933-43 and 1954--.
2. Progressus: Engineering Progress. Dusseldorf, 1920--. Bimonthly, German and English editions; about quarterly in Spanish, French

2.9:Pl200C (Cont.)

and Russian; semiannual in Chinese, and annual in Portuguese, Italian and Polish editions.

3. VDI Zeitschrift. 36 issues per year, 1857--. Annual bibliographies, one to a subject, in most issues. VDI Jahrbuch (annual, 1954--), also carries bibliographies.
4. Ingenieur-Archiv. Springer. Quarterly, 1929--.
5. Werkstattstechnik: Zeitschrift für Produktion und Betrieb. Springer and VDI. Monthly, 1907-44, 1949--(Title varies).
6. Applied Scientific Research. NCO-TNO. Irregular, 1950--. A. Mechanics, Heat, Chemical Engineering, Mathematical Methods. B. Electrophysics, Acoustics, Optics, Mathematical Methods.
7. Zeitschrift für Metallkunde. VDI. Monthly, 1911--.
8. Forschung auf dem Gebiete des Ingenieurwesens. VDI. Bimonthly, 1935--.
9. Vide: Technique et applications. Paris. Bimonthly, 1946--; abstract section.
10. Memoires de la SICF. Quarterly, 1848--.
11. Vakuum-Technik. Esch/Taunus; 8 issues per year. (Formerly Glas-und Hochvakuumtechnik).
12. Russian Technical Literature. OECD. Quarterly, 1960--. Also carries title Russkaya tekhnicheskaya literatura. Editions in English, French and German.

2.9:Pl200D Engineering.

1. Memoirs of the Faculty of Science. Kyushu. A. Mathematics, 1947--. B. Physics, 1960--. C. Chemistry, 1959--. Memoirs of the Faculty of Engineering, 1942--. Reports of the Research Institute for Applied Mechanics, 1953--. All irregular; all in English.
2. Inzhenerno-fizicheskii Zhurnal. Minsk. Monthly, 1958--.
3. Osaka Kogyo Gijutsu Shikenjo Kiho: Bulletin. IRI. Quarterly. Osaka Furitsu Kogyo Shoreikan Hokoku: Reports. Semiannual. Contents and summaries in English.
4. Bulletin of JSME. Tokyo. Quarterly, 1958--. In English.

2.9:Pl200D (Cont.)

5. Memoirs of the Defense Academy (Japan): Mathematics; Physics; Chemistry; Engineering. Yokosuka, 1959--. Irregular. In English.
6. Journal of Scientific and Industrial Research. New Delhi. Monthly, 1942--.

2.9:Pl300 Chemistry: Analysis (General). In a somewhat primitive sense, chemical analysis was mainly instrumental well over a century ago. Proliferation of increasingly sophisticated instruments has been dizzyingly rapid in the past few decades; there are many new periodicals, and old ones are changing their angle of attack.

1. Chemia Analityczna. Warsaw. Monthly, 1956--. Summaries in English.
2. Publications GAMS: Methodes physiques d'analyse. Quarterly, 1938--.
3. Analytical Chemistry. ACS. Monthly, 1929--. Has an instrumentation section. Collective indexes, 1929-43 and 1944-58.
4. Zhurnal analiticheskoi khimii. Moscow. Bimonthly, 1946--. Translated as Journal of Analytical Chemistry. Consultants, 1952--.
5. Chimie analytique: essais, mesures, controle. Soprodoc. Monthly, 1897--. Abstract section. (Title was Annales de chimie analytique, 1897-1946).
6. Analyst. London. Monthly, 1875--.
7. Zeitschrift für analytische Chemie. Munich. Irregular, 1862--.
8. Analyzer. Beckman. Quarterly, 1960--.
9. Zavodskaya laboratoriya. Moscow. Monthly, 1935--. Translated as Industrial Laboratory. USSR, ISA, 1958--.
10. Bunseki kagaku: Japan Analyst. Tokyo. Monthly. Contents and summaries in English.
11. Journal of Physical Chemistry. ACS. Monthly, 1896--.
12. Talanta: International Journal of Analytical Chemistry. Pergamon. Monthly, 1958--.

2.9:Pl330 Chemistry: Analysis (Special Methods).

1. Microchemical Journal. New York. Quarterly, 1957--.

2.9:Pl330 (Cont.)

2. Journal of Electroanalytical Chemistry. Elsevier. Monthly, 1959--.
3. Porarogurafii: Review of Polarography. ES (Japan). Quarterly, 1953--.
4. Berichte der DRG. Semiannual, 1954--. Bibliographies.
5. Zeitschrift für physikalische Chemie. 9 issues per year, 1887--. Leipzig (DDR). Independent (West German) edition. Akademische. Monthly, 1954--.
6. Advances in X-Ray Analysis: Proceedings of the Annual Conferences on Applications of X-Ray Analysis. Plenum. Annual, 1960--.
7. Rheology: Theory and Applications. Academic Press. Biennial, 1956--.
8. Journal of Molecular Spectroscopy. Academic Press. Monthly, 1957--.
9. Chromatographic Reviews. Elsevier. Annual, 1958--.
10. Mikrochimica et Ichnoanalytica Acta. Spring. Irregular, 1914--. (et Ichnoanalytica added to name, 1963).
11. Journal de chimie physique et de physicochimie biologique. Paris. Monthly, 1903--.
12. Journal of Quantitative Spectroscopy and Radiative Transfer. Pergamon. Bimonthly, 1961--.
13. Advances in Analytical Chemistry and Instrumentation. Interscience. About annual, 1960--.
14. Proceedings of the National Analysis Instrumentation Symposium. ISA. Annual, 1954--.

2.9:Pl370 Chemistry: Industrial.

1. Electrochemical Technology. ES. Bimonthly, 1963--. New York.
2. Dechema Erfahrungsaustausch. Irregular, 1949--. Parts: Uebersichten; Abhandlungen; Einzelfragen; Ubungsaufgaben.
3. Industrial and Engineering Chemistry. ACS. Monthly, 1909--, with quarterly supplements, 1962--.
4. Chemical Engineering Progress. AIChE. Monthly, 1908--.
5. Canadian Chemical Processing. Toronto. Monthly, 1917--.
6. Journal of the ES. Monthly, 1902--. (Includes Transactions of the ES).

2.9:P1370 (Cont.)

7. Chemical and Process Engineering and Atomic World. London. Monthly, 1920--.
8. Journal of Chemical Physics. AIP. Monthly, 1933--.
9. Chemische Technik. Leipzig (DDR). Monthly, 1949--. Apparently no kin to defunct Chemische Technik (1928-45), which absorbed Chemische Apparatur (1913-42) in 1943 and still has some reference value.
10. Electrochimica Acta. Pergamon. Irregular, 1959--.
11. Denki kagaku. ES (Japan). Monthly. Includes abstracts and patent notices. Journal of the ES (Japan). Quarterly, 1933--. In English.
12. Berichte der BGPC (new title, 1963, of Zeitschrift für Elektrochemie); 10 issues per year, 1894--.

2.9:P1400 Testing materials. Like chemical analysis, materials testing has progressed far past the old machines for tearing, crushing or abrading samples to an early demise. In both cases one result is rapid obsolescence of the literature; constant attention to new literature is needed.

1. Nondestructive Testing. SNT. Bimonthly, 1942--. (Title was Industrial Radiography and Nondestructive Testing, 1942-49).
2. Mitteilungen der DMPA. Irregular (various titles), 1883--; Wissenschaftliche Abhandlungen der DMPA, irregular, 1925--.
3. Revue de metrologie pratique et legale: Poids et mesures. Paris. Monthly, 1923--. Decennial indexes.
4. Materials Research and Standards. ASTM. Monthly, 1961--. (Successor to ASTM Bulletin, 1921-60).
5. RILEM Bulletin. Paris. Irregular, 1954--. (Edition in English).
6. EOQC Bulletin. Quarterly, 1958--.
7. Test Engineering and Management. Oakhurst, N. J. Monthly, 1954--.
8. Applied Materials Research: International Journal of the Properties and Testing of Engineering Materials. London. Quarterly, 1962--.
9. Statensprovningsanstalt. Stockholm. Irregular. Berättelse, 1920--; Meddelande, 1921--; Cirkular, 1922--. In English, or in Swedish with English summaries.

- 2.9:P1400 (Cont.)
10. CIRP Annalen. UNESCO and Springer. Quarterly, 1951--. (Mechanics, testing).
 11. Schweizer Archiv für angewandte Wissenschaft und Technik: Zeitschrift für das Gesamtgebiet der Werkstoffkunde und Werkstoffprüfung. SVMT. Monthly, 1935--. Berichte des SVMT. Irregular, 1925--.
 12. Materialprüfung. DVM and VDI. Monthly, 1959--. Papers in German, French or English.
 13. Quality Assurance. Wheaton, Ill. Monthly, 1962--.
 14. Microtecnic: International Review for Measuring and Gaging Techniques, Optics and Precision Mechanics. Lausanne. Monthly, 1947--. Editions also in French and German.
 15. Proceedings of the SESA. Semiannual, 1943--.
 16. Proceedings of the Symposium on Physics and Nondestructive Testing. ASTM. Annual, 1960--.

2.9:P1500 Metrology and Calibration. Metrology here simply means measuring (methods, devices, units). Entries are mainly generalities; measurement in some aspect runs all through this Guide. Calibration is interpreted in its customary meaning.

1. Revue de metrologie pratique et legale. Paris. Monthly, 1923--.
2. Monthly Review: Journal of the IWMA. Monthly, 1893--.
3. Bulletin of the NRLM. Irregular.
4. Scale Journal. Chicago. Monthly, 1914--.
5. Amtsblatt für das Eichwesen. Vienna. About 8 issues per year.
6. Technische Ueberwachung. Berlin. Semimonthly, 1897-1943 (title began with Zeitschrift fur die, 1897-1939). Suspended, 1943-59; resumed 1960--.
7. PTB Mitteilungen: Amts- und Mitteilungsblatt der PTB. Bimonthly, 1964--; successor to Amtsblatt der PTB, irregular, 1891-1963. Separate from the annual Wissenschaftliche Abhandlungen der PTB, 1949--. (Until 1949 the Bundesanstalt was the Reichsanstalt, PTA).
8. Technical News Bulletin. NBS. Monthly, 1917--. Includes lists of NBS publications.

2.9:P1500 (Cont.)

9. Boletim de Metrologia. Rio de Janeiro. Annual, 1955--.
10. Sbornik trudov VNIIM. Irregular, 1939--. (Title, 1939-40, Trudy VNIIM). Issues prior to 1939 were under the same title in French.
11. Metric Measures: Journal of Weights and Measures. New Delhi. Bimonthly, 1958--.
12. Report of the National Conference on Weights and Measures. NBS. Annual, 1916--.

2.9:P1550 Standards and Specifications. Standardizing agencies and societies issue great numbers of reports and bulletins, such as librarians call "separates", which are not entered in this Guide; but some of their indexes (e.g. from ASTM and DNA) are entered.

1. Informaciones IRAM. Irregular, 1936--.
2. DIN-Mitteilungen. DNA. Monthly, 1922--. New, amended and canceled German standards; standards scheduled for revision or cancellation; foreign standards; technical articles.
3. Normalisace. Prague. Monthly, 1953--.
4. Bulletin mensuel de la normalisation francaise. AFN. Monthly, 1951--.
5. South African Standards Bulletin. Pretoria. Monthly, 1947--.
6. ASTM Proceedings. Annual, 1899--. Quinquennial indexes, 1951--, with some entries from other ASTM sources. Fifty Year Index to Technical Papers and Reports, 1901-50; 1952; 230 pp.
7. Standardizatsiya. Moscow. Monthly, 1937--.
8. Annual Report: NBS, 1927--. (Title was Standards Yearbook, 1927-34).
9. Standardizarea. Bucharest. Monthly, 1941--. (formerly Buletinul de Standardizare).
10. ASTM Standards. Triennial, 1939--. Alternate title, Book of ASTM Standards. Separate annual index. Supplements between issues.
11. ISI Bulletin. Bimonthly, 1949--.
12. SAA Bulletin. Quarterly, 1938--.

2.9:P1550 (Cont.)

13. Bulletin Belge de Metrologie: Belgisch Bulletin van het Ijkwezen. Brussels, Monthly, 1941--.
14. Normalisatie. Delft. Bimonthly, 1925--.
15. Courier de normalisation. AFN. Bimonthly, 1936--.
16. New Zealand Standards. Bulletin. Wellington. Quarterly, 1955--.
17. Index of Military Specifications and Standards. MB. Semiannual, 1951--, with cumulative monthly supplements, in 4 v.: Military, Army, Navy, Air Force.
18. Magazine of Standards. ASA. Monthly, 1930--. (Various earlier titles).

2.9:P1600 General Science. Some major journals covering science broadly are listed here because all science is more or less instrumental. In a dry run to see how instrumental, casual scanning of the French Academy's Comptes rendus over several years turned up many descriptions of instruments and shattered the cherished novelty of one American invention by at least four decades of priority.

1. Journal of the IIS. Quarterly, 1919--.
2. Naturwissenschaften. Springer. Semimonthly, 1914--.
3. Journal of Research. NBS, 1928--. Sections: A. Physics and Chemistry. Bimonthly. B. Mathematics and Mathematical Physics. Quarterly. C. Engineering and Instrumentation. Quarterly. D. Radio Propagation. Quarterly.
4. Priroda. Nauk. Monthly, 1912--.
5. Doklady AN SSSR. Nauk. 3 issues per month, 1933--. Selected sections translated as: Doklady: Earth Sciences Sections, AGI, 1959--. Soviet Physics: Doklady, AIP, 1956--.
6. Science. AAAS. Weekly, 1883--.
7. Atti della ANL: Classe di scienze fisiche, matematiche e naturali. Rome. Irregular, 1604--. Memorie della ANL. Irregular, 1870--. Rendiconti della ANL. Monthly, 1870--.
8. Zeitschrift für Naturforschung. Wiesbaden. Monthly, 1946--. A. Astrophysik, Physik und physikalische Chemie. B. Chemie, Biochemie, Biophysik, Biologie und verwandte Gebiete.

9. Archives des sciences. Geneva. Monthly, 1948--. (The title, 1800-1947, was Archives des sciences physiques et naturelles).
 10. Scientia (Milan): Rivista Internazionale di Sintesi Scientifica. Monthly, 1912--.
 11. Comptes rendus hebdomadaires des seances de l'Academie des Sciences. Paris. Weekly, 1835--; from 1964, in 15 separate subject sections.
 12. Nature. Macmillan. Weekly, 1869--.
 13. Proceedings of the NAS. Monthly, 1915--.
 14. Journal des recherches du CNRS. Quarterly, 1950--.
 15. Philosophical Transactions of the RSL. Monthly, 1665--. Section A. Mathematical and Physical Sciences. Proceedings (1800--). Irregular.
 16. Journal of the Franklin Institute. Philadelphia. Monthly, 1828--.
 17. Nature, Science, Progress. Dunod. Monthly, 1873--.
- 2.10 Supplement. Late entries, contained in this Supplement, are not numbered 2.10. They carry the appropriate class number, followed by -S, which refers readers to 2.10.
- 2.1:A500-S Electroanalytical Abstracts. Basel. Bimonthly, 1963--.
- 2.2:B100-S
1. P. W. Becker and S. E. Becker, Bibliography on Masers, 1954-61 and supplement. Oak Ridge, 1963.
 2. References on Fatigue: Bibliography, 1950-1954. STP9-F, ASTM, 1955.
 3. Frederick I. Ordway, III, Annotated Bibliography of Space Science and Technology, With an Astronomical Supplement, 1931-1961. Arfor Pubs., Washington. Ed. 3, 1962.
- 2.3:1000A-S Max Sucher and Jerome Fox, editors, Handbook of Microwave Measurements. Wiley, 1963; 1183 pp. in 3 v.
- 2.3:1000C-S
1. O. Horberg, FM-Teknik: Radioteknikerns handbok. Stockholm. Ed. 3, 1961; 604 pp.

2.3:1000C-S (Cont.)

2. A. G. Fuchs, A. N. van der Heijde and L. L. Mulder, *Het verwarmingsboek: Leer-en handboek voor de verwarmingsindustrie.* The Hague. Ed. 4, 1963; 496 pp.
- 2.3:1200A-S Franklyn W. Kirk and N. R. Rimboi, *Instrumentation.* Am. Tech. Soc., Chicago, 1962; 263 pp.
- 2.3:1300C-S Karl Steinbuch, *Automat und Mensch: Kybernetische Tatsachen und Hypothesen.* Springer. Ed. 2, 1963; 392 pp.
- 2.3:1330C-S Jean Marcus, *Telecommande et telemesure appliquees aux engins speciaux.* Eyrolles, 1962; 280 pp.
- 2.3:1400A-S
1. Allen Kent, *Textbook on Mechanized Information Retrieval.* Interscience, 1962; 268 pp.
2. P. Braffort and D. Kirschberg, *Computer Programming and Formal Systems.* Amsterdam, 1963; 161 pp.
3. H. N. Laden and T. R. Gildersleeve, *System Design for Computer Applications.* Wiley, 1963; 330 pp.
- 2.3:1400C-S C. E. Froberg and B. Sigurd, *Datamaskiner och deras användning inom vetenskap, administration och språköversättning.* Lund, 1962; 147 pp.; bibliography.
- 2.3:1400D-S L. I. Gutemakher, *Elektronnye informatsionno-logicheskie machiny.* Nauk, 1960; 189 pp. Translated by Rosalind Kent as Electronic Information-Logic Machines. Interscience, 1963; 170 pp.
- 2.3:1430A-S Willis H. Ware, *Digital Computer Technology and Design.* I. Mathematical Topics, Principles of Operation, and Programming. II. Circuits and Machine Design. Wiley, 1963; 245+560 pp.
- 2.3:1430C-S Wolfgang Giloi and R. Lauber, *Analogrechnen: Programmierung, Arbeitsweise und Anwendung des elektronischen Analogrechners.* Springer, 1963; 423 pp.
- 2.3:1500-S Raymond L. Sanford and I. L. Cooter, *Basic Magnetic Quantities and the Measurement of the Magnetic Properties of Materials.* NBS Monograph 47, 1962; 36 pp.; bibliography.
- 2.3:1530A-S Sam'l J. Mason and H. J. Zimmerman, *Electronic Circuits, Signals and Systems.* Wiley, 1960; 616 pp.

2.3:1530C-S J. R. Acton and J. D. Swift, Cold Cathode Discharge Tubes.
Academic Press, 1963; 351 pp.

2.3:1530D-S G. Ya. Mirskii, Radioelektronnye izmereniya. (Radio-electronic Measurements); Moscow, 1963; 528 pp; bibliography.

2.3:1550D-S

1. Boris I. Boltaks, Diffusiya v poluprovodnikakh, Moscow, 1961. Translated by J. I. Carasso as Diffusion in Semiconductors. Academic Press, 1963; 378 pp.
2. Ya. A. Fedotov, Osnovy fiziki poluprovodnikovykh priborov (Physics of Semiconductors). Moscow, 1963; 653 pp.
3. S. M. Ryvkin, Fotoelektricheskie yavleniya v poluprovodnikov (Photoelectric Effects in Semiconductors). Moscow, 1963; 494 pp.; bibliography.

2.3:1560A-S

1. R. D. Middlebrook, Differential Amplifiers: Their Analysis and Their Applications in Transistor d-c Amplifiers. Wiley, 1963; 115 pp.
2. Transistor Circuit Design. Texas Instruments and McGraw-Hill, 1963; 523 pp.

2.3:1570-S Edw. Keonjian, editor, Microelectronics: Theory, Design and Fabrication. McGraw-Hill, 1963; 383 pp.

2.3:1600A-S Raymond L. Sanford and I. L. Cooter, Basic Magnetic Quantities and the Measurement of the Magnetic Properties of Materials. NBS Monograph 47, 1962; 36 pp.; bibliography.

2.3:1600C-S R. Rudenberg, Elektrische Wanderwellen auf Leitungen und in Wicklungen von Starkstromanlagen. Springer. Ed. 4, 1962; 395 pp. (Stray currents)

2.3:1630C-S A. F. P. H. Bloemen and A. D. Mesritz, Elektrische meetinstrumenten en meetschakelingen. Haarlem. Ed. 7, 1963; 334 pp.

2.3:1670-S Ernest A. Lynton. Superconductivity. Wiley, 1962; 174 pp.

2.3:1730C-S F. Schröter, editor, Fernsehtechnik. Springer. I. Grundlagen des elektronischen Fernsehens, 1956; 772 pp. II. Technik des elektronischen Fernsehens, 1963; 586 pp.

2.3:1770A-S Leon S. Nergaard and M. Glicksman, Microwave Solid-State Engineering. Van Nostrand, 1964; 229 pp.

2.3:1770D-S M. B. Vinogradova and A. A. Semenov, Osnovy teorii

2.3:1770D-S

raspostraneniya ul'trakorotnykh voln v troposfere (scattering of ultrashort waves). Moscow, 1963; 192 pp.

2.3:1800-S

1. J. F. White, Flight Performance Handbook for Powered Flight Operations: Flight Mechanics and Space Vehicle Design, Empirical Formulae, Analytic Approximations and Graphical Aids. Wiley, 1963; 557 pp.
2. Manuel Fernandez and G. R. Macomber, Inertial Guidance Engineering. Prentice, 1962; 530 pp.
3. W. Priester, editor, Space Research. III. Proceedings of the 3rd International Space Science Symposium (1962). Wiley, 1963; 1275 pp.
4. Jorgen Jensen, G. E. Townsend, Jyri Kork and J. D. Kraft, Design Guide to Orbital Flight. McGraw-Hill, 1962; 896 pp.

2.3:1830A-S

1. Frederick I. Ordway, III, J. P. Gardner and M. R. Sharpe, Jr., Basic Astronautics: Introduction to Space Science, Engineering and Medicine. Prentice, 1962; 581 pp.
2. Frederick I. Ordway, III, J. P. Gardner, M. R. Sharpe, Jr., and R. C. Wakeford, Applied Astronautics: Introduction to Space Flight. Prentice-Hall, 1963; 449 pp.

2.3:1900A-S

1. Wm. E. Kuhn, Headlee Lamprey and Chas. Sheer, Ultrafine Particles (ES Symposium, 1961). Wiley, 1963; 561 pp.
2. Riyad R. Irani and C. F. Callis, Particle Size: Measurement, Interpretation and Application. Wiley, 1963; 166 pp.

2.3:2100A-S

1. M. Francon, Modern Applications of Physical Optics. Wiley, 1963; 114 pp.
2. Allan H. Lytel, ABC's of Lasers and Masers. Sams, 1963; 95 pp.

2.3:2300-S

1. Eric Schram, Organic Scintillation Counters: Counting of Low-Energy Beta Emitters. Elsevier, 1963; 212 pp.

2. Geo. L. Clark, editor, Encyclopedia of X-Rays and Gamma Rays. Reinhold, 1963; 1149 pp.
3. D. M. Kheiker and L. S. Zeven, Rentgenovskaya difraktometriya. Moscow, 1963; 380 pp; bibliography. (X-ray diffractometry).
4. B. P. Golubev, Dozimetriya i zashchita ot ioniziruyushchikh izluchenii (Ionizing Radiation: Dosimetry and Protection). Moscow, 1963; 336 pp.; bibliography.
5. S. I. Babichenko, A. A. Bogdanov and L. S. Gorn, Kontrol'no-izmeritel'naya radiometricheskaya apparatura (Radiometric Dosimetry and Control Devices). Moscow, 1963; 150 pp.; bibliography.
6. Ya. B. Zel'dovich and Yu. P. Raizer, Fizika udarnykh voln i vysokotemperaturnykh gidrodinamicheskikh yavlenii. Moscow, 1963; 632 pp. (Impact radiation; hydrodynamics at high temperatures).

2.3:2400A-S Peter B. Jones, Optical Model in Nuclear and Particle Physics. Interscience, 1963; 118 pp.

2.3:2400B-S Neutron Dosimetry: International Symposium, Harwell, 1962. IAEA, 1963; 2 v., 652 + 615 pp.

2.3:2500A-S Richard W. Roberts and T. A. Vanderslice. Ultrahigh Vacuum and its Applications. Prentice-Hall, 1963; 190 pp.

2.3:2800B-S Alfred G. Gaydon and I. R. Hurle, Shock Tube in High-Temperature Chemical Physics. Reinhold, 1963; 307 pp.

2.3:2900C-S R. Comelet, Mecanique experimentale des fluides. Masson. I, 1961, 244 pp.; II, 1963, 442 pp.

2.3:3000A-S J. R. Van Wazer, J. W. Lyons, K. Y. Kim and R. E. Colwell, Viscosity and Flow Measurement: Laboratory Handbook of Rheology. Wiley, 1963; 406 pp.

2.3:3100-S Chas. T. Morrow, Shock and Vibration Engineering. I. Wiley, 1963; 384 pp.

2.3:3200A-S

1. Hans Bloemendaal, Zone Electrophoresis in Blocks and Columns. Elsevier, 1963; 219 pp.
2. LaVerne S. Birks, Electron Probe Microanalysis. Interscience, 1963; 253 pp.

2.3:3200A-S (Cont.)

3. Bruno Breyer, Alternating Current Polarography and Tensammetry. Interscience, 1963; 288 pp.
4. Nathan H. Cook and E. Rabinowicz, Physical Measurement and Analysis. Addison, 1963; 312 pp.

2.3:3200C-S H. Neff, Grundlagen und Anwendung der Röntgen-Feinstruktur-Analyse. Oldenbourg. Ed. 2, 1962; 460 pp.

2.3:3300-S S. S. Gorelik, L. N. Rastorguev and Yu. A. Skakov, Rentgenograficheskii i elektronograficheskii analiz metallov (X-Ray and Electronographic Metallography). Moscow, 1963; 256 pp.

2.3:3500-S

1. Stacy V. Jones, Weights and Measures: An Informal Guide. Public Affairs Press, 1963; 141 pp.
2. Poverka priborov dlya izmereniya davleniya: Sbornik instruktsii. Izdaniye ofitsial'noe. Moscow, 1963; 374 pp. (Calibrating pressure gages).

2.3:3600-S Basil Banks, Ultrasonic Flaw Detection in Metals: Theory and Practice. Iliffe, 1962; 256 pp.

2.3:3700-S Standards and Practices for Instrumentation. ISA, 1963; 300 pp.

2.6:G100-S Albert J. Walford and L. M. Payne, Guide to Reference Material. LA, 1959; 543 pp. Supplement, Bowker, 1963; 370 pp.

2.6:G200-S Bernard M. Fry and F. E. Mohrhardt, Guides to Information Sources in Science and Technology. I. Space Science and Technology. Wiley, 1963; 579 pp.

2.8:Pa200-S Patent Classification Class Lists. USPO and OTS. PG 163,664, 1963; on microfilm, original classification 6 reels, cross references 7 reels. Design patent classification and cross references, 1 reel, PB 163,665.

2.9:Pl200A-S Journal of Vacuum Science and Technology. AIP and AVS. Bimonthly, 1964--.

3. AUTHOR INDEX.

The author index includes:

a) Names of authors, editors, compilers and translators.

b) Names (often abbreviated) of corporate authors (government agencies, societies, institutions, companies, etc.). Abbreviations are interpreted in 1.10.

The subject index is the source of references for which no author is listed. Since names of commercial publishers are omitted, this occurs most frequently in entries for their periodicals.

No distinctions are made as to national origin of corporate authors; entries are by the name (or its abbreviation) of the corporate entity. Locations (not mailing addresses) are entered with the names in 1.10.

3. AUTHOR INDEX

- AAAS 2.9:P1600,6
 Aarons, Jules 2.3:2000,5
 AAS 2.3:1830A,1; 2.9:P300A,10,16
 Abraham, Herbert 2.3:3600,5
 ABS 2.2:B400A,9
 Academie des Sciences 2.9:1600,11
 ACeS 2.1:A700,13
 ACGIH 2.3:1270,18
 Achema 2.5:D100C,5
 ACM 2.1:A300,7; 2.3:1430A,7;
 2.9:P200,10
 ACS 2.1:A500,2; 2.6:G200,2;
 2.7:I200,1; 2.9:P1300,3,11;
 2.9:P1370,3
 Ackerman, Eugene 2.3:3400A,11
 AcSA 2.9:P870,8,9
 Acton, J. R. 2.3:1530C-S
 Adamson, Colin 2.3:1670,5
 Adkins, B. 2.3:1100,7
 Adler, Richard B. 2.3:1530A,12;
 2.3:1670,15; 2.3:1700A,3
 AEC 2.1:A400,3; 2.1:A600,16;
 2.3:1000A,25; 2.3:2400A,9; 2.5:D100A,
 15; 2.9:P900A,1,6,11; 2.9:P900D,5
 AED 2.2:B400C,2
 AEG 2.3:1630C,6; 2.9:P570,5
 AEI 2.9:P530,13; 2.9:P750,2
 AEI Ltd. 2.1:A300,6
 AERE 2.3:2130,13
 AES 2.6:G200,2; 2.9:P870,1
 AES (Japan) 2.9:P900D,7
 AF 2.3:1830A,7; 2.3:1900,5
 AFN 2.9:P1550,4,15
 AFOSR 2.2:B100,22
 AGARD 2.3:1800,4,6
 AGET 2.3:1550A,5
 AGI 2.1:A400,6; 2.9:P1050,3,18;
 2.9:P1600,5
 AGU 2.9:1000A,2,4
 Ahrendt, Wm. R. 2.3:1300A,4;
 2.3:1330A,5
 Ahrens, Louis H. 2.3:3200A,14
 AI 2.2:B400A,11; 2.9:P170,6
 AIAA 2.1:A600,4,16; 2.9:P300A,2,
 7,12
 AIChE 2.9:P1370,4
 AID 2.2:B300,3
 AIEE 2.2:B200,7; 2.9:P530,11;
 2.9:P600A,12; 2.9:P730,2
 AIMME 2.9:P1200A,4
 AIMMPE 2.3:2800A,14; 2.9:P1200A,4
 AIP 2.3:1000A,6; 2.3:2800A,6;
 2.9:P100A,5; 2.9:P400,3;
 2.9:P830D,2; 2.9:P870,2,7,9;
 2.9:P1100A,1,3,4; 2.9:P1100D,1,2,3;
 2.9:P1150A,1,2,6; 2.9:P1200A-S;
 2.9:P1370,8; 2.9:P1600,5
 Air Univ. 2.1:A700,16; 2.7:I100,5
 Ajzenberg-Selove, Fay 2.3:2400C,4
 Akademie 2.1:A400,8; 2.1:A500,4;
 2.1:A600,3; 2.3:1900,1; 2.3:2130,15;
 2.9:P400,4; 2.9:P900C,4; 2.9:P1050,
 11; 2.9:P1150C,7
 Akademische 2.9:P1330,5
 ALA 2.6:G100,5
 Albers, Vernon M. 2.3:2600,12
 Albrecht, A. P. 2.3:1000A,15
 Aleksandrov, S. G. 2.3:1830D,2
 Alexander, Carter 2.6:G100,6
 Alexander, Wm. 2.3:1230B,2
 Alkemade, C. T. J. 2.3:2100C,8,18
 Allen, Harry C., Jr. 2.3:2130,12
 Alley, Charles L. 2.3:1500,13
 Alt, Franz L. 2.3:1430A,9
 AMA 2.1:A100,2
 AMaS 2.1:A100,10; 2.9:P400,6,10
 Ameling, Walter 2.3:1430C,5
 Am. Gastroscopic Club 2.9:P130,9
 Am. Gastroscopic Society 2.9:P130,9
 AMeS 2.1:A400,4; 2.3:2000,8;
 2.9:P1050,2
 AMiS 2.9:P830A,6
 Amos, Stanley W. 2.3:1550B,4
 AMS 2.3:2900A,5
 Anderson, Thomas P. 2.3:2900A,11
 Andrews, H. L. 2.3:2400A,11
 Anhorn, V. J. 2.3:1100,9
 ANIDEL 2.2:A300,3
 ANL 2.9:P1600,7
 APL 2.3:2600,13; 2.6:G200,3,4;
 2.9:P1150A,4
 Appelt, Heinz 2.3:3200C,6
 Argentieri, Domenico 2.3:2100C,7
 Arguimban, L. B. 2.3:1530A,12
 Arlt, I. E. 2.8:Pa300,4
 Armstrong, A. F. 2.2:B200,9
 Army Signal Corps 2.3:2500A,6
 Arnold, Ronald N. 2.3:2900B,4
 Aronson, M.H. 2.3:1530A,22; 2.3:3500,8
 Aronssohn, R. 2.3:1560C,4
 ARS 2.9:P300A,14
 ASA 2.3:3700,3; 2.9:P1550,18

3. Author Index (Cont.)

- ASDC 2.9:P200,9
 ASE 2.9:P530,6
 Aseev, Boris P. 2.3:1770D,5
 ASHAE 2.5:D100A,4
 Askania 2.9:P100C,2
 ASLIB 2.4:D,6;2.6:G300,4
 ASM 2.3:1000A,23
 ASME 2.1:A200,6;2.2:B100,11;
 2.3:1000A,11;2.3:1770A,7;2.3:2500A,2;
 2.3:2900A,4;2.3:3000A,2;2.5:D100A,3;
 2.9:P130,4;2.9:P1200A,8
 Asmuss, Friedrich 2.3:2700,3
 ASP 2.3:2200,8;2.9:P830A,2
 ASQC 2.3:1530A,5,16;2.9:P600A,1;
 2.9:P200,9
 ASRE 2.9:P1200A,11
 ASTM 2.1:A300,9;2.2:B100,14;2.2:P100-
 S-2;2.3:3300,7;2.3:3600,4,7;
 2.9:P1400,16;2.9:P1550,6,10
 Atabekov, G. I. 2.3:1630D
 Atwood, K. W. 2.3:1500,13
 Aubert, J. 2.3:1700C,7
 AUDD 2.8:Pa300,6
 Audubert, Rene 2.3:3200C,4
 Auerbach, R. 2.3:2100C,14
 Auger, Raymond W. 2.3:1630A,7
 Auwaerter, Max 2.3:2500C,6
 Avery, D. G. 2.3:2100A,9
 AVS 2.9:P1200A,9;2.9:P1200A-S

 Babichenko, S. I. 2.3:2300-S-5
 Babikov, Oleg I. 2.3:2600,10
 Baehr, H. D. 2.3:2800C,3
 Baghdady, Elie J. 2.3:1700A,7
 Bair, Edward J. 2.3:3200A,12
 Baker, H. Dean 2.3:2800A,5
 Baker, N. H. 2.3:2800A,5
 Bakish, Robert 2.3:1500,21;2.3:2400A,7
 Balabanian, Norman 2.3:1600A,3
 Banks, Basil 2.3:3600-S
 Banner, E. H. W. 2.3:1230B,6
 Barber, Alfred W. 2.3:1530A,1
 Barchewitz, Pierre 2.3:2130,8
 Barnard, G. P. 2.3:2130,14
 Barr, W. E. 2.3:1100,9
 Barratt, E. S. 2.2:B400A,12
 Barraud, J. 2.3:2100C,12
 Barrett, A. S. D. 2.3:2500B,5
 Basmajian, J. V. 2.3:3400A,9
 Batailler, G. 2.3:2200,7

 Batel, W. 2.3:3200C,8
 Bates, Roger G. 2.3:3200A,16
 Batsanov, Stepan S. 2.3:2100D
 Battey, Edw. W. 2.3:1200B,5
 Baudoux, P. 2.3:1600C,4
 Bauer, Georg 2.3:2100C,6
 Bauman, Robert P. 2.3:2130,6
 Baumeister, Theodore 2.3:1000A,28
 Baurand, J. 2.3:1600C,10;2.3:1770C,3
 Bayer, E. 2.3:3300,11
 Bazantova, Helga 2.3:3400D,3
 Bazovsky, Igor 2.3:1200A,10
 BCeS 2.1:A700,8
 BCS 2.9:P200,12
 BEAMA 2.9:P530,8
 Beck, A. H. W. 2.3:1500,18;2.3:1530B,7
 Becker, K. 2.3:2300,37
 Beckett, C. W. 2.3:3000A,1
 Beckman 2.9:P1300,8
 Beckwith, T. G. 2.3:1200A,3;2.3:3500,
 Behar, Manoel F. 2.3:1200A,13
 Bellander, J. 2.3:1730C,14
 Bell, David A. 2.3:1770A,6
 Bell Labs. 2.1:A100,12;2.2:B400A,5,8;
 2.3:1560A,3,12;2.7:I200,2;2.9:P700,
 6,8
 Benedict, W. S. 2.3:3000A,1
 Beneking, H. 2.3:1560C,5
 Bennett, Alva H. 2.3:2170,11
 Bennett, W. R. 2.3:1700A,4
 Bent, R. D. 2.3:1830A,12,19
 Benz, Friedrich 2.3:1700C,4
 Beranek, Leo L. 2.3:2600,8,14
 Berg, Akael' I. 2.3:3400D,5
 Bergmann, Ludwig 2.3:2600,16
 Berkeley, E. C. 2.3:1400A,7
 Berl, W. G. 2.3:3200A,10
 Berndt, G. 2.3:3500,1
 Bertholdi, J. 2.3:3000D,2
 Besoain-Santander, Manuel 2.3:3400D,7
 Besserer, C. W. 2.3:1800,17
 Besterman, Theodore 2.2:B400B,3
 Bevitt, William D. 2.3:1560A,9
 BGPC 2.9:P1370,12
 BHI 2.9:P130,1
 BHRA 2.1:A600,1
 Biemann, Klaus 2.3:2130,16
 Bier, Milan 2.3:3200B,4
 Biffen, Frank M. 2.3:3200A,18
 Billeter, Ernst P. 2.3:1400C,4
 Binney, E. A. 2.3:1100,7

3. Author Index (Cont.)

- Biondi, F. J. 2.3:1560A,12
BIRE 2.9:P750,3
Birkhoff, Garrett 2.3:3000A,8
Birks, J. B. 2.3:1500,18;2.3:2400B,3
Birks, LaVerne S. 2.3:2130,4;
2.3:3200-A-S-2
BIS 2.3:1730B,2;2.3:1830B,1,2;
2.9:P300B,3
Blackburn, John F. 2.3:2300,17;
2.3:3000A,12
Blackhurst, A. W. 2.3:1100,7
Blackwell, Lawrence 2.3:1550A,2
Blackwell, William A. 2.3:2900A,19
Blakemore, John S. 2.3:1550B,7
Blatz, Hanson 2.3:2300,39
Blau, Henry H., Jr. 2.3:2300,35
Bleisteiner, G. 2.3:1000C,1;
2.3:1300C,7
Blet, G. 2.3:1630C,2
Bleuler, E. 2.3:1900,3
Bloemen, A. F. P. K. 2.3:1630C-S
Bloemendaal, Hans 2.3:3200A-S-1
Blom, Mogens A. 2.3:1000C,2
BLS 2.2:B200,6
BMI 2.1:A300,1;2.1:A600,11;
2.6:G100,7
BNES 2.9:P900B,3
Bockris, J. O'M. 2.3:2800B,4
Bogdanov, A. A. 2.3:2300-S-5
Boisvert, M. 2.3:1430C,7
Bokrinskaya, A. A. 2.3:1730D,4
Boley, Bruno A. 2.3:2800A,7
Boltaks, Boris I. 2.3:1550D-S
Bolt, R. H. 2.3:2600,2
Boltz, David F. 2.3:3200A,8
Bolz, R. W. 2.3:1000A,11
Bone, A. J. 2.3:1270,10
Bonnevale, G. 2.3:1830C
Bonney, E. A. 2.3:1800,17
Boone, E. Milton 2.3:1530A,11
Booth, Andrew D. 2.3:1400B,3;
2.3:1430B,2
Booth, Kathleen H. V. 2.3:1430B,1,2
Bopp, W. 2.3:1730C,10
Borden, Perry A. 2.3:1830A,11
Born, Max 2.3:2100B,4

Bosworth, Richard C. L. 2.3:3200B,5
Bouche, C. 2.3:1000C,7
Boulding, R. S. H. 2.3:1730A,3
Boutry, Georges A. 2.3:2100C,14

Bouvet, J. 2.3:1830C
Bouvier, M. 2.3:1230B,6
Bowerman, Elizabeth G. 2.6:G100,9
Boyd, Anne M. 2.7:I300,9
Boyd, George A. 2.3:3400A,13
Bozorth, Richard M. 2.3:1600A,7
BPI 2.3:1700B,1; 2.9:P700,14
BPO 2.8:Pa100,5,10;2.8:Pa200,1,6,8
Braddick, H. J. J. 2.3:1100,10
Braffort, P. 2.3:1400A-S-2;
2.3:1400C,10
Brandeis University 2.9:P1100A,2
Brandmuller, Josef 2.3:2130,2
Brandwood, L. 2.3:1400B,3
Brault, R. 2.3:1770C,8
Braun, Ludwig 2.3:1370A,2
Brazier, Mary A. B. 2.3:3400A,7
Breed, Charles B. 2.3:1270,10
Breese, S. S. 2.3:2170,13
Breinin, Goodwin M. 2.3:3400B,3
Brekhovskikh, Leonid M. 2.3:3000D,3
Bremer, John W. 2.3:2800A,11
Brennan, J. N. 2.2:B400A,6
Breyer, Bruno 2.3:3200A-S-3
Brezina, Miroslav 2.3:3400D,3
Bridgers, H. E. 2.3:1560A,3,12
Bridgman, P. W. 2.3:2500A,9
Brillouin, Leon 2.3:1400A,13
Britten, Frederick J. 2.3:2700,4
BRL 2.3:1430A,16
Brombacher, W. G. 2.3:2500A,5,7,11
Broschat, E. 2.3:2900C,10
Brown, A. E. 2.3:2600,5
Brown-Boveri 2.9:P570,2
Brown, George 2.3:2100B,2
Brown, J. 2.3:1730B,4
Brown, Kenneth 2.3:1830A,17
Brown, Robert G. 2.3:1300A,14;
2.3:1330A,1
Brown Univ. 2.9:P400,5
Brownell, Gordon L. 2.3:2300,47
Brugel, Werner 2.3:2130,18
Bruining, H. 2.3:1500,18
Brunetti, C. 2.3:1530B,9
BSI 2.3:1370B,1
BSIRA 2.1:A200,9;2.3:1200B,2;
2.3:1230B,3,5
BSR 2.1:A400,9
Buch, S. 2.3:2500C,4
Buchanan, John P. 2.3:1730A,9
Buchheim, Robert W. 2.3:1830A,6

3. Author Index (Cont.)

Buchholz, Werner 2.3:1400A,4
 Buck, N. L. 2.3:1200A,3;2.3:3500,6
 Bukstein, J. 2.3:3400A,15
 Bundy, F. P. 2.3:2500A,14
 Bu Ord 2.3:1230A,15
 Burgess, Eric 2.3:1830A,20
 Burhop, E. H. S. 2.3:1570,1
 Burke, Arvid J. 2.6:G100,6
 Burroughs Corp. 2.1:A300,13
 Burton, J. 2.3:1300C,9;2.3:3500,10
 Bu Ships 2.3:2600,16
 Button, K. J. 2.3:1730A,18
 Butz, William H. 2.3:3200A,20
 Bu Weaps 2.3:1800,15

Cady, W. M. 2.3:2300,26
 Cairo, L. 2.3:1770C,2
 Calabro, S. R. 2.3:1500,4
 Calvet, Edouard 2.3:2800C,7
 Cambel, Ali B. 2.3:2900A,11
 Cambridge 2.9:P450B,2;2.9:P830B,9
 Cambridge Comm. Corp. 2.1:A300,12
 Canadian Patent Office 2.8:P100,4
 Candler, Christopher 2.3:2100B,8
 Cannon, C. G. 2.3:1570,6
 Canuel, J. 2.3:1330C,7
 Carasso, J. I. 2.3:1550D-S-1
 Carmichael, C. 2.3:1000A,26
 Carpentier, J. 2.3:1830C
 Carr, C. C. 2.3:1000A,12
 Carroll, G. C. 2.3:1200A,8;2.3:1230A,9
 Carroll, John M. 2.3:1530B,4
 Carter, L. J. 2.3:1830B,2
 Cassidy, Harold G. 2.3:3200A,6
 du Castel, F. 2.3:1770C,6
 CAV 2.3:1230D,2;2.3:1300D,7;
 2.3:1400C,8;2.3:1550C,2;2.3:1670,10;
 2.9:P1000D,1,3,4
 Cerni, Richard H. 2.3:1270,19
 CGS 2.3:2000,1
 Chaffois, J. 2.3:1800,10
 Chamot, Emile M. 2.3:3200A,22
 Champeix, R. 2.3:1530C,6
 Chance, Britton 2.3:2300,19;
 2.3:2700,1
 Chaplin, Allen L. 2.3:3200A,4
 Charyk, J. V. 2.3:1800,7
 Chernov, Leo A. 2.3:1770D,2
 Chernyi, Gorimir G. 2.3:3000D,1

Chestnut, Harold 2.3:1300A,15;
 2.3:1330A,4
 Chicago 2.3:1900,7;2.9:P830A,11
 Chilton, Cecil H. 2.3:1000A,1
 Chougnet, P. 2.3:1630C,5
 Chu, Lan Jen 2.3:1670,15;2.3:1700A,3
 Chu, Yaohan 2.3:1430A,21
 Churchman, C. West 2.3:3500,5
 CIIPN 2.2:B400D,3
 CIRP 2.9:P1400,10
 CISE 2.9:P900C,14
 Clark, Douglas E. 2.3:1700B,2
 Clark, George L. 2.3:2170,9;
 2.3:2300,41;2.3:2300S-2
 Clarricoats, P. J. B. 2.3:1730A,4
 Cleave, J. P. 2.3:1400B,3
 Cliton, J. 2.3:2900C,1
 CLS 2.2:B100,1,7
 CMA 2.5:D100B,1
 CNET 2.1:A300,15;2.3:1530C,8
 CNRS 2.1:A100,4;2.3:2800C,5;
 2.9:P130,7;2.9:P1000C,5;2.9:P1600,14
 Coales, J. F. 2.3:1300D,6
 Coblenz, Abraham 2.3:1560A,7
 Cochran, Wm. G. 2.3:1100,6
 Cockrell, William D. 2.3:1500,10
 Collin, Robert E. 2.3:1730A,6
 Collins, G. B. 2.3:2300,6,28
 Collins, John R. 2.3:3200A,24
 Collins, R. B. 2.3:2200,5
 Collis, C. F. 2.3:1900A-S-2
 Collison, Robert L. 2.6:G100,11
 Columbia 2.1:A700,12;2.2:B200,10;
 2.3:1430A,12;2.3:1500,6
 Colwell, R. E. 2.3:3000A-S
 Comings, Edward W. 2.3:2500A,3
 Comolet, R. 2.3:2900C,8;2.3:2900C-S
 Condon, Edw. U. 2.3:1000A,3
 Conn, G. K. T. 2.3:2100A,9
 Connolly, T. W. 2.3:1430A,4
 Conrad, Victor 2.3:1900,9
 Considine, Douglas M. 2.3:1200A,12
 Conway, Hugh G. 2.3:3000B,3
 Cook, Nathan H. 2.3:3200A-S-4
 Cooley, Paul A. 2.3:3700,3
 Cooter, I. L. 2.3:1500-S;2.3:1600A-S
 Copper Development Assoc'n
 2.3:2800B,2
 Corcoran, G. F. 2.3:1630A,5
 Corcoran, William H. 2.3:3000A,6

3. Author Index (Cont.)

- Corfu Advanced Study Institute 2.3:2000,5
Corrigan, K. E. 2.3:3400A,18
COSPAR 2.9:P300C,2
Cosslett, Vernon E. 2.2:B100,21; 2.3:2130,3; 2.3:2170,7,15,17
Couling, S. A. 2.3:2900B,2
Council of Ministers, USSR 2.3:3500,4
Cowan, John 2.3:1770A,8
Cowdry, Edmund V. 2.3:1100,3
Cox, G. M. 2.3:1100,6
Crafton, Paul A. 2.3:3100,7
Crandall, Stephen H. 2.3:3100,9
Crane, Evan J. 2.6:G200,5
Crawford, Alan E. 2.3:2600,6
Crede, Charles E. 2.3:3100,5,13
Cremer, L. 2.3:2600,18
Croft, T. 2.3:1000A,12
Cross, J. L. 2.3:2500A,5,16
Cross, P. C. 2.3:2130,12
Crouthamel, C. E. 2.3:2300,34
CSIRO 2.2:B100,24
Curie, D. 2.3:2100C,4
Curtis, H. Allen 2.3:1630B,2
- Dalla Valle, Jos. M. 2.3:2900B,1
Dalton, Blanche H. 2.6:G200,7
Damaskine, N. I. 2.2:B200,8
DATA 2.9:P770,11
Davies, Gomer L. 2.3:1230A,2; 2.3:1630A,6
Davis, D. C. 2.3:1000A,15
Davis, H. E. 2.3:3600,9
Davis, Sidney A. 2.3:1330A,11
Davy, J. R. 2.3:2500B,4
DBP 2.3:1270,14
DDC 2.1:A100,5
DDR 2.8:Pal00,22; 2.8:Pa300,4
Dean, John A. 2.3:2100A,7,11
Dean, Mills 2.3:1230A,8
Debraine, P. 2.3:3500,12
Decaulne, P. 2.3:1300C,8
Dechema 2.1:A200,1; 2.5:D100C,5
Defense Academy (Japan) 2.9:P1200D,5
Deitz, A. C. H. 2.3:3600,11
Delahay, Paul 2.3:3200A,26
Delavenay, Emile 2.2:B200,5
Delavenay, K. 2.2:B200,5
Demarles, F. 2.3:1300C,6
Denis-Papin, M. 2.3:1200C,3
- Denn, Robert C. Jr. 2.3:1800,9
Desirant, M. 2.3:1700C,9
Dettman, John W. 2.3:2900A,9
Deve, Charles 2.3:1200C,1
DeWitt, David 2.3:1560A,18
D'Eye, R. W. M. 2.3:2300,43
Diaz, Joaquin B. 2.3:2900A,13
Dicke, Robert H. 2.3:2300,8
Dickson, J. H. 2.3:1200A,14; 2.3:1230A,14
Diels, K. 2.3:2500C,2
Diemer, A. 2.3:1300C,11
DIN 2.9:P1550,2
Direktoratet for Patent- og Varenmaerkevaesnet 2.8:Pal00,2
Ditl, A. 2.3:1700C,3
Dix, Charles H. 2.3:2000,3
DMA 2.5:D100C,2
DMPA 2.9:P1400,2
DNA 2.3:3300,8; 2.3:3700,1,4; 2.9:P1550,2
DO 2.2:B100,5
Dobrski, Jerzy 2.3:3400D,1
DOD 2.2:B100,12; 2.3:1550A,5
Dodik, S. D. 2.3:1730D,3
DOFL 2.2:B100,20; 2.3:1550A,9; 2.6:G200,8
Donaldson, Coleman du P. 2.3:1800,7
Donaldson, P. E. K. 2.3:3400B,1
Donovan, A. F. 2.3:1800,7
Dorn, John E. 2.3:2900A,7
Dorrance, William H. 2.3:1800,14
Doucet, Y. 2.3:2800C,1
Doughtie, Venton L. 2.3:2900A,15
Douglas, R. D. 2.3:1230A,8
DPA 2.8:Pal00,8,16,17; 2.8:Pa200,4
DPG 2.9:P1100C,5,7
DPV 2.8:P100,2
Drabble, John R. 2.3:1550B,3
Draganescu, M. 2.3:1530D,2
Draper, C. S. 2.3:1200A,16
DRG 2.9:P1330,4
DSIR 2.3:1400B,1; 2.7:I300,10
DT 2.2:B1400C,3
Dubbel, Heinrich 2.3:1000C,7
Duclaux, F. 2.3:2000,7
Ducloux, G. 2.3:2100C,1
Dudley, Darle W. 2.3:1000A,8
Duke, W. M. 2.3:2800A,9
Dumesnils, Danloux 2.3:1430C,4

3. Author Index (Cont.)

- Dummer, G. W. A. 2.3:1500,20;
 2.3:1530B,8,9;2.3:1550B,8;2.9:P700,
 16,17,18
- DuMont 2.9:P170,4
- Dushman, Saul 2.3:2500A,1
- Dutton's 2.3:1900,2
- DVM 2.9:P1400,12
- Eastin, Roy B. 2.6:G100,13
- Ebert, H. 2.3:1000C,3
- Eckman, Donald P. 2.3:1200A,17;
 2.3:1370A,7
- Edmundson, H. P. 2.3:1400A,5
- Ehricke, K. A. 2.3:1800,17
- EIA 2.9:P250A,3,4;2.9:P600A,1,2
- Eidgenössisches Amt für geistiges
 Eigentum, Bern 2.8:P100,9
- Eirich, F. R. 2.3:3600,11
- Eisler, Paul 2.3:1570,4
- EL 2.3:1430D,2
- von Elbe, Guenter 2.3:2800B,5
- Elliott, A. 2.3:1200A,14;2.3:1230A,14
- Elmore, W. C. 2.3:2400A,2
- Elonka, S. M. 2.3:1270,1
- Emel'ianov, A. I. 2.3:2800D,10
- Emmerich, C. L. 2.3:1230A,4
- Emmons, H. W. 2.3:1800,7
- Engelhard 2.9:P170,8
- Engstrom, Arne 2.3:2170,17
- EOQC 2.9:1400,6
- Erasmus, H. 2.8:Pa300,4
- Ericsson 2.9:P570,7
- ES 2.3:1900A-S1;2.9:P1370,1,6
- ES (Japan) 2.9:P1330,3;2.9:P1370,11
- Eschelbach, R. 2.3:3300,10
- Eshbach, Ovid W. 2.3:1000A,9
- Eskinazi, Salomon 2.3:3000A,14
- ESL 2.1:A600,13
- Espe, Werner 2.3:2500C,9
- Estermann, I. 2.3:1900,3
- Europarat Committee 2.3:Pa300,11
- Evans, J. 2.3:1560A,6
- Evans, Walter R. 2.3:1300A,17
- Ewald, Heinz 2.3:3200C,2
- Fagot, J. 2.3:1500,18
- Faisandier, J. 2.3:2900C,12
- Faltin, Hans 2.3:1270,6
- Fano, Robert M. 2.3:1670,15;
 2.3:1700A,3
- Farrington, G. H. 2.3:1300A,7
- Fassbender, H. 2.3:2300,32
- Fedorov, R. E. 2.3:1830D,2
- Fedotov, Ya. A. 2.3:1550-S2;
 2.3:1730D,1
- Feigl, E. 2.3:2170,16
- Felten 2.9:P570,3
- Feodosiev, V. I. 2.3:1830D,1
- Fernandez, Manuel 2.3:1800-S2
- Ferns, James L. 2.3:1670,6
- Feshbach, H. 2.3:1100,2
- FID 2.7:I100,1
- Fiebranz, A. 2.3:1770C,5
- Fifer, Stanley 2.3:1430A,20
- Finkelnburg, Hans H. 2.3:1330C,3
- Finstenwalder, R. 2.3:2200,9
- Fischer, Heinz 2.3:2300,35
- Fischer, Robert B. 2.3:2170,19
- Fisher, Ronald A. 2.3:1100,1,4
- Fleury, P. 2.3:2100C,5
- Flock, Ernest F. 2.2:B400A,2
- Flory, L. E. 2.3:1770A,3
- Fluegge-Lotz, Irmgard 2.3:1370A,13
- Flugge, J. 2.3:2200,10
- Flugge, Wilhelm 2.3:1000A,29;
 2.3:2900C,6
- Flynn, T. M. 2.2:B400A,4
- Fogel, Lawrence J. 2.3:3400A,6
- Fondazione Giorgio Ronchi 2.9:P830C,7
- Fontaine, G. 2.3:1560C,7
- Foppl, Ludwig 2.3:2100C,16
- Forsythe, W. E. 2.3:1000A,5
- Fosberry, John 2.3:2200,12
- Foskett, Douglas J. 2.6:G100,2
- Foster, D. 2.3:3200A,11
- Foster, L. E. 2.3:1270,19
- Fouille, A. 2.3:1200C,3;2.3:1330C,7;
 2.3:1600C,3;2.3:3100,3
- Fournet, G. 2.3:1550C,1
- Fournier, A. 2.3:1500,8
- Fox, Jerome 2.3:1000A-S
- Fradin, Afroim Z. 2.3:1730D,2
- Francis, G. E. 2.3:2300,45
- Francon, M. 2.3:2100A-S1;2.3:2100C,5
- Frank, Ernest 2.3:1670,16
- Franklin Institute 2.9:P1600,16
- Frederick, Carl L. 2.3:1500,15
- Freitag, R. F. 2.3:1800,17

3. Author Index (Cont.)

- Frey, Austin R. 2.3:2600,1
Freymann, R. 2.3:3200C,10
Fribance, Austin E. 2.3:1200A,15
Fricke, Hans W. 2.3:1530D,1
Friedman, Morris 2.3:2900D,2
Froberg, C. E. 2.3:1400C-S
Fromy, E. 2.3:1700C,5;2.3:1730C,7
Fruhauf, H. 2.3:1700C,3
Frumkin, A. N. 2.3:1550D,2
Frungel, Franz 2.3:1670,11;
2.3:1730C,4
Fry, Bernard M. 2.6:G200-S
Funk, G. 2.3:1670,9
Furukawa Electric Co. 2.9:P570,9
- GAMS 2.9:P1300,2
GAFC 2.1:A700,6
Gardner, H. A. 2.3:3600,2
Gardner, J. P. 2.3:1830A-S1,S2
Gartner, Wolfgang W. 2.3:1560A,17
Gatland, Kenneth W. 2.3:1830B,1
Gaul, Roy D. 2.3:1270,20
Gaydon, Alfred G. 2.3:2800B,6,S
GE 2.3:1500,19;2.3:1560A,10
Geary, Peter J. 2.3:1230B,3
GEC 2.9:P700,4
Geil, G. W. 2.3:2800A,8
Gelbtuch, A. 2.3:1550D,4
George, Joseph J. 2.3:2000,2
Gerbach, G. 2.3:3300,11
Geyger, William A. 2.3:1630A,11
Ghose, Rabindra N. 2.3:1700A,10
Gibbons, H. P. 2.2:B400A,1
Gibbons, J. F. 2.3:1560A,14
Gildersleeve, T. R. 2.3:1400A-S3
Gille, J. C. 2.3:1300C,8
Gillespie, A. B. 2.3:1500,18;
2.3:2400A,5
Gillon, E. 2.3:1600C,5
Giloi, Wolfgang 2.3:1430C,6,S
Ginzburg, Vitalii A. 2.3:1700D
Ginzton, Edward L. 2.3:1700A,5
Glaser, Walter 2.3:2170,3
Glasoe, George N. 2.3:2300,5
Glass, R. C. 2.3:1100,8
Glasser, Otto 2.3:3400A,3
Glasstone, Samuel 2.3:2400A,9
Glazebrook, Richard 2.3:1000B,1
Glocker, Richard 2.3:3600,13
Goering, H. L. 2.3:1550A,8
- Goethert, B. H. 2.3:1800,6
Gohlke, Werner 2.3:1270,15;
2.3:1670,17
Gol'denveizer, A. L. 2.3:2900D,3
Golding, Edw. W. 2.3:1230B,1
Goldman, Richard 2.3:2600,4
Goldman, Sylvia 2.6:G200,3
Goldsmid, H. J. 2.3:1550B,3
Goldsmith, Alex 2.3:1000B,2
Goldstein, G. D. 2.3:1300A,5
Golubev, B. P. 2.3:2300-S4
Gomer, Robert 2.3:1900,7
Gonda, J. 2.3:3100,1
Goode, Harry H. 2.3:1300A,3
Goodheart, Clarence F. 2.3:1600A,2
Gordy, Walter 2.3:2130,1
Gorelik, S. S. 2.3:3300-S
Gorlich, P. 2.3:2100C,2
Gorn, L. S. 2.3:2300-S5
Gotlieb, C. C. 2.3:1400A,12
Goto, Mochinori 2.3:1430D,2
Gottlieb, Irving M. 2.3:1530A,3
Goubau, Georg 2.3:1730A,13
Grabbe, Eugene M. 2.3:1300A,12
Grabner, Alfred 2.3:2200,10
Grammel, Richard 2.3:2900C,14
Granville, J. W. 2.3:1550B,8
Grasshof, G. 2.3:2300,40
Grave, Hans F. 2.3:1230C,4;
2.3:1270,3
Graves, Eileen C. 2.7:I100,9
Gray, Dwight E. 2.3:1000A,6
Gray, Paul E. 2.3:1630A,8
Gray, Truman S. 2.3:1500,7
Greenwood, Ivan A. Jr. 2.3:2300,21
Gregory, Winifred 2.7:I300,8
Griffin, N. B. 2.3:1500,20
Griffiths, Roosevelt 2.3:1270,7
Grings, W. W. 2.3:3400A,19
Grube, R. H. 2.3:2800A,4
Gruhle, Wolfgang 2.3:1530C,12
Gubanov, A. I. 2.3:1550D,5
Guild, John 2.3:3500,3
Guilleminet, G. 2.3:1330D,3
Guillien, R. 2.3:1530C,2
Guillon, M. 2.3:2900C,4
Guinier, A. 2.3:1730C,12
Guyesse, L. 2.3:2600,13a
Gundlach, F. W. 2.3:1700C,2
Gunther, K. 2.3:1270,14
Gurevich, Aleksandr G. 2.3:1770D,4

3. Author Index (Cont.)

- Guthrie, A. 2.3:2400A,2
- Haas, Alfred 2.3:1530B,5
 Habell, K. J. 2.3:2100B,5
 Hackforth, Henry L. 2.3:2100A,10
 Haeder, H. 2.3:2900C,16
 Hague, Bernard 2.3:1230B,7
 Haine, Michael E. 2.3:2130,3; 2.3:2170,1
 Haines, J. E. 2.3:1370A,5
 Haitinger, Max 2.3:2170,21
 Hall, John S. 2.3:2300,2
 Halpern, Carl 2.2:B400A,2
 Hamilton, Donald R. 2.3:2300,7
 Hamilton, Jerome J. 2.3:1530B,1
 Handloser, John S. 2.3:3400A,1
 Hans, Hermann A. 2.3:1530A,7
 Harley, John H. 2.3:3200A,3
 Harms, Fritz F. 2.3:1000C,9
 Harris, Cyril M. 2.3:3100,13
 Harris, Forest K. 2.3:1670,8
 Harrison, Thomas R. 2.3:2800A,13
 Harrison, V. G. W. 2.3:3000B,4
 Hartog, Jacob P. D. 2.3:3100,11
 Harvard 2.3:1900,9;2.3:2600,22
 Harvey, Arthur F. 2.3:1700A,8
 Harvey, P. D. 2.3:1000A,20
 Hass, F. 2.3:1530C,7
 Hass, Georg 2.3:1900,10
 Havlicek, F. I. 2.3:1200C,6
 Hawkins, Reginald R. 2.6:G300,1
 Hawley, Dean 2.3:2200,6
 Hawthorne, W. R. 2.3:1800,7
 Haxby, R. O. 2.3:1900,3
 Hayes, Wallace D. 2.3:3000A,16
 HDL 2.6:G200,8
 Heavens, O. S. 2.3:2100A,5
 Hecht, F. 2.3:3200C,1
 Heckelmann, Adolf 2.3:1270,9
 Heftmann, Erich 2.3:3200A,25
 Helstrom, Carl W. 2.3:1500,18
 Hengstenberg, J. 2.3:3200C,9
 Henley, A. 2.2:B400A,11
 Henney, Keith 2.3:1500,14
 Henning, F. 2.3:2800C,9
 Henning, H. 2.3:1300C,7
 Herrmann, R. 2.3:2100C,8,18
 Herzfeld, Charles M. 2.3:2800A,6
 Herzog, Werner 2.3:1530C,1; 2.3:1730C,9
 Hetenyi, Miklos I. 2.3:1000A,16
 Heumann, Gerhart W. 2.3:1330A,3
 Heunert, Hans-Henning 2.3:2200,3
 Heyden, R. J. 2.3:2400A,2
 Heyn, Eugen 2.3:1900,1
 Heyrovsky, J. 2.3:3300,11
 Hibbard, W. R., Jr. 2.3:2500A,14
 Hilbourne, R. A. 2.3:1730B,3
 Hilger 2.1:A500,1;2.3:1200B,4; 2.3:1200C,1;2.3:2100B,8;2.9:P830B,5
 Hill, John C. 2.3:1900,2
 Hillier, J. 2.3:2170,12
 Hilsenrath, Joseph 2.3:3000A,1
 Himmler, C. R. 2.3:1330C,2;2.3:3000C,1
 Hine, Gerald J. 2.3:2300,47
 Hingarani, N. G. 2.3:1670,5
 Hintenberger, Heinrich 2.3:3200C,2
 Hirschberg, D. 2.3:1400A-S2; 2.3:1400C,10
 Hirschhorn, H. J. 2.3:1000B,2
 Hoare, Frank E. 2.3:2800B,7
 Hodgman, Chas. D. 2.3:1000A,27
 Hoffmann, F. 2.3:1370C,5
 Hogg, C. A. 2.3:1730A,15
 Holbrook, Jas. G. 2.3:1500,18
 Holdam, J. Vance Jr. 2.3:2300,21
 Holland-Merten, Erwin L. 2.3:2500C,1,10
 Hollingdale, S. H. 2.3:1400B,2
 Holm, Else 2.3:1570,10
 Holm, Ragnar 2.3:1570,10
 Holmes, D. K. 2.3:2400A,12
 Holmes, P. J. 2.3:1550B,6
 Holmstrom, J. Edwin 2.6:G200,1
 Holsizer, Robert I. 2.3:2300,20
 Holzbock, Werner G. 2.3:1200A,7
 Holzmann, Max 2.3:3400C,2
 Horger, O. J. 2.3:1000A,11
 Horna, O. 2.3:1230D,2
 Horner, J. B. 2.3:2300,7
 Horton, H. L. 2.3:1000A,2;2.3:2900A,3
 Horton, Joseph W. 2.3:2600,20
 Hosmer, G. L. 2.3:1270,10
 Howard, R. C. 2.3:1800,11
 Hoyt, S. L. 2.3:1000A,11
 Hubner, Erhard 2.3:3100,2
 Huckert, Jesse 2.3:1000A,11
 Hueter, Theodore F. 2.3:2600,2
 Hughes, D. G. 2.3:2400A,3
 Hughes, D. J. 2.3:1100,8
 Hughes, V. W. 2.3:1900,3

3. Author Index (Cont.)

- Hult, J. 2.3:3300,12
Hume, J. N. P. 2.3:1400A,12
Hume, Kenneth J. 2.3:3500,14,15
Humphries, John 2.3:1830A,18
Hund, August 2.3:1770A,4;2.3:2300,29
Hunt, Frederick V. 2.3:2600,22
Hunter, Lloyd P. 2.3:1000A,17;
2.3:1550A,10
Hure, F. 2.3:1560C,3
Hurle, I. R. 2.3:2800B-S
Hurley, Richard B. 2.3:1560A,5,16
Husky, Harry D. 2.3:100A,13
Hutarew, Georg 2.3:1370C,2
Hyde, Claudius G. 2.3:2800B,1
Hyzer, William G. 2.3:2200,11
- IAEA 2.3:2300,38;2.3:2400B-S;
2.3:2400C,1,5;2.9:P900B,5;2.9:P900C,
3,6,11
IAF 2.3:1800,5;2.9:P300C,4
IAS 2.5:P100A,8;2.9P300A,11
IBA 2.2:B200,10
ICC 2.2:B200,1;2.9:P200,15
ICF 2.1:A700,15
ICI 2.9:P830C,1
ICPUAE 2.3:2300,30
ICVT 2.9:P1200A,9
Idrac, J. 2.3:1200C,2
IE 2.9:P1200B,2
IEEE 2.1:A100,9;2.3:1400B,5;2.9:P100,9;
2.9:P530,2
IEEE (Japan) 2.9:P530,1
IEEE 2.2:B100,2,17;2.2:B200,7;
2.9:P530,1,11,14;2.9:P730,2,5;
2.9:P750,1,7
IES 2.3:P830B,4;2.3:2100A,12
IF 2.1:A700,10
IFAC 2.2:B200,2;2.3:1300A,10
IFIP 2.3:1400B,4
IGT 2.1:A700,5
II 2.8:Pa300,7
IIS 2.9:P1600,1
Illinois 2.3:1400A,10;2.3:1570,2
IM 2.1:A700,3
IME 2.9:P1200B,1
IMEKO 2.3:1200C,4
Indiana 2.9:P400,11
Ingle, M. J. 2.3:1800,16
Ingraham, M. C. 2.3:2400A,2
INSBK 2.9:P900D,2
- Institut National de la Propriete
Industrielle 2.8:Pa100,6,12
Institute of High Speed Mechanics
2.9:P450D,6
Institution of Telecommunication
Engineers 2.9:P700,12
Instituto de Geofisica 2.9:P1000D,2
Instituto Nazionale di Ottica
2.9:P830C,7
Interkama 2.5:D100C,4
Interlingua 2.2:B100,7
International Fine Technics Assoc.
2.9:P100B,4a
Interpas 2.8:Pa300,1,13,15
Ioffe, Abram F. 2.3:1550D,1,4
IP 2.1:A100,2;2.3:1270,13;2.3:1550C,2;
2.3:2130,14;2.3:2500A,4;2.9:P100B,1;
2.9:P1150B,1
IPI 2.1:A200,3;2.9:P250A,5;2.9:P500,
13;2.9:P600A,3;2.9:P1150A,7
IRAM 2.9:P1550,1
Irani, Riyad R. 2.3:1900A-S2
IRE 2.1:A300,5;2.3:1400A,9;2.3:2400A,
6;2.9:P200,11;2.9:P530,4,11;
2.9:P730,2
IRE (Australia) 2.9:P730,16
IRI 2.9:P1200D,3
IRS 2.7:I100,6
ISA 2.3:1200A,5;2.3:1230A,3;2.3:1270,
5,20;2.3:1300A,10;2.3:2800A,6;
2.3:3200A,2;2.3:3700-S;2.5:D100A,18;
2.9:P100A,6;2.9:P100D,1;2.9:P250D,5;
2.9:P1300,9;2.9:P1330,14
Isaacs, John D. 2.3:1270,17
ISCI 2.2:B400A,3
ISI 2.9:P1550,11
ISO 2.3:1230C,3
ISTI 2.1:A100,1
ITC 2.2:B100,10
I Tel Tel 2.3:1700A,13;2.3:1800,2
ITT 2.1:A700,1
ITU 2.9:P700,5
IUC 2.3:2100C,10
IUPAC 2.3:2800A,16
IVA 2.1:A600,2;2.3:1200C,7
Ives, David J. G. 2.3:1630B,3
Ivey, Henry F. 2.9:P600A,7
IWBRATEM 2.1:A300,10
IWMA 2.9:P1500,2

3. Author Index (Cont.)

- Jackson, Leonard C. 2.3:2800A,15
Jackson, R. M. 2.3:3000A,7
Jackson, Willis 2.3:1400B,5
Jacob, Caius 2.3:3000C,4
Jacobi, G. T. 2.3:1300A,5
Jaeckel, Rudolf 2.3:2500C,2,8
Jaeger, John C. 2.3:2900A,17
Jaeger, R. 2.3:1330C,4
Jakosky, Jay J. 2.3:1900,11
James, Henry D. 2.3:1330A,6
James, Hubert M. 2.3:2300,25
James, R. W. 2.3:2130,17
James, Walter H. 2.3:2900A,15
Jamieson, John A. 2.3:2800A,4
Janz, George J. 2.3:1630B,3
Japanese Patent Office 2.8:Pal00,11
Jasik, Henry 2.3:1000A,18
JCL 2.1:A700,4
Jeffers, Karl B. 2.3:2000,1
Jeffries, R. J. 2.3:1200A,11
Jellinghaus, Werner 2.3:1600C,6
Jensen, Jorgen 2.3:1830A,16;
 2.3:1800,S4
Jerger, J. J. 2.3:1800,17
Jernkontorets 2.1:A700,7
Jervis, M. W. 2.3:2400B,2
John, Siegfried 2.3:1200C,5
Johnson, D. P. 2.3:2500A,5
Johnson, R. R. 2.3:3000A,7
Johnson, V. A. 2.3:1900,3
Jona, Franco 2.3:1730A,10
Jones, D. D. 2.3:1730B,3
Jones, Ernest B. 2.3:1200A,9
Jones, Franklin D. 2.3:2900A,3
Jones, George A. 2.3:2200,1
Jones, Peter B. 2.3:2100A-S
Jones, Richard W. 2.3:1330A,12
Jones, Stacy V. 2.3:3500-S1
Jonscher, A. K. 2.3:1550A,4
JPL 2.1:A600,12
JPRS 2.2:B400D,1,5;2.3:1300D,3
JSASS 2.9:P300D,1
JSME 2.3:1300D,2;2.9:P1200D,4
JSTM 2.3:3600,12
Judge, Arthur W. 2.3:1200B,1
Jupnik, Helen 2.3:2170,11
Juran, J. M. 2.3:1000A,10
Jury, Eliahu I. 2.3:1330A,2
Juvel, R. S. 2.3:3200A,1
Kahan, T. 2.3:1770C,2
Kallen, Howard P. 2.3:1200A,2;
 2.3:1300A,8
Kammerlingh Onnes Laboratory
 2.9:P800,7
Karadimov, Simeon 2.3:3400D,8
Karelitz, M. B. 2.3:2300,26
Karpinski, F. 2.3:1330C,6
Karplus, Walter J. 2.3:1430A,6,10
Kastler, D. 2.3:2900C,2
Katz, Harold W. 2.3:1630A,2
Kauderer, Hans 2.3:2900C,18
Kay, Desmond 2.3:2170,20
Kazan, B. 2.3:1400A,8
Keery, W. J. 2.3:1730A,5
Keitz, H. A. E. 2.3:2100C,1
Kemler, Emory N. 2.2:B200,4
Kempthorne, Oscar 2.3:1100,5
Kent, Allen 2.3:1400A-S1
Kent, F. L. 2.7:I100,4
Kent, F. W. 2.3:2100C,13
Keonian, Edward 2.3:1570-S
Kerchner, Russell M. 2.3:1630A,5
Kerr, Donald E. 2.3:2300,13
Kessler, Claus 2.3:1430C,2
Kheiker, D. M. 2.3:2300-S3
Kieffer, H. 2.3:1230C,3
Kienzle, O. 2.3:3500,1
Kim, K. Y. 2.3:3000A-S
Kingery, W. D. 2.3:2800A,3,17
Kinnard, Isaac F. 2.3:1530A,10
Kinsler, Lawrence E. 2.3:2600,1
Kirkpatrick, Sidney D. 2.3:1000A,1
Kirschbaum, H. 2.3:1770A,8
Kitov, Anatolin I. 2.3:1400D,2
Klamt, Johannes 2.3:1600C,1
Kleen, Werner 2.3:1730C,2
Klein, M. 2.3:3700,4
Klemperer, O. 2.3:2170,4
Klinder, F. 2.3:1530C,5
Klingler, Rudolf 2.3:2900C,19
Kloeffler, Royce G. 2.3:1370A,9
Kment, V. 2.3:2300,46
Kneller, Eckart 2.3:1600C,2
Knipp, Julian K. 2.3:2300,7
Knodel, Walter 2.3:1400C,3
Knoll, Max 2.3:1400A,8;2.3:1530C,10
Knowlton, Archer E. 2.3:1000A,4
Koch, Jacobus 2.3:1230C,1
Koch, K. M. 2.3:1550C,7

3. Author Index (Cont.)

Koelle, Heinz H. 2.3:1830A,5
 Koenig, Herman E. 2.3:2900A,19
 Kohl, Jerome 2.3:2300,31
 Kohler, Horst 2.3:2200,13
 Kolodkine, P. 2.3:2300,44
 Kolthoff, Izaak M. 2.3:3200A,23
 Konig, Albert 2.3:2200,13
 Kono, Tokoyushi 2.2:B300,7
 Kopfermann, Hans 2.3:2400C,6
 Koppelman, F. 2.3:1230C,6; 2.3:1670,1
 Kork, Jyri 2.3:1830A,16; 2.3:1800,S4
 Korn, G. A. 2.3:1000A,13
 Korn, Granino M. 2.3:1430A,18
 Korn, Theresa M. 2.3:1430A,18
 von Korshenewsky, Nicolai 2.3:1700C,11
 Kortavykh, V. F. 2.3:1730D,5
 Kortum, G. 2.3:3300,11
 Korwien, Hanns 2.3:1230C,15
 Kosow, Irving L. 2.3:1770A,9
 Kotzebue, K. L. 2.3:1550A,2
 Kozesnik, Jaroslav 2.3:1400C,8
 Kraft, J. D. 2.3:1800-S4
 Krageloh, E. 2.3:3600,8
 Kratz, L. 2.3:1230C,8
 Kraus, H. L. 2.3:1700A,1
 Krautkramer, Herbert 2.3:2600,21;
 2.3:3600,16
 Krautkramer, Josef 2.3:2600,21;
 2.3:3600,16
 Kret, David B. 2.3:1230A,7
 Kretzmann, R. 2.3:1500,22
 Krill, Arthur M. 2.3:1800,12
 Krinitskii, N. A. 2.3:1400D,2
 Kroenert, Josef 2.3:1000C,5
 Kromer, H. 2.3:1560C,5
 Krugman, Leonard 2.3:1560A,2
 Kruse, Paul W. 2.3:1770A,2
 Ku, Y. H. 2.3:1370C,4; 2.3:1600A,4;
 2.3:1630A,9
 Kuhlmann, N. E. 2.8:Pa200,4,9
 Kuhn, A. 2.3:2300,46
 Kuhn, William E. 2.3:1900A-S1
 Kuo, B. C. 2.3:1370A,12
 Kyushu 2.9:Pl200D,1

LA 2.2:B400B,1; 2.6:G100,1,S
 Laboratoire Suisse de Recherches
 Horlogeres 2.9:Pl30,3
 Laden, H. N. 2.3:1400A,S3
 Ladenburg, R. W. 2.3:1800,7

Lafferty, J. M. 2.3:2500A,1
 Lafosse, M. 2.3:1600C,9
 Lafuze, David L. 2.3:1630A,4
 Lago, Gladwyn V. 2.3:1670,3
 LaJoy, M. H. 2.3:1370A,4
 Lancaster, O. E. 2.3:1800,7
 Lanczos, Cornelius 2.3:2900A,1
 Landee, Robert W. 2.3:1000A,15
 Landolt-Bornstein 2.3:1000C,10
 Lane, Cecil T. 2.3:3000A,18
 Langbein, Rudolf 2.3:1630C,3
 Lange, F. H. 2.3:1570,5
 Lange, Norbert A. 2.3:100A,21
 Langer, Rudolph E. 2.3:1700A,6
 Langford-Smith, Fritz 2.3:1000B,3
 Langmuir, David B. 2.3:1500,3
 Laporte, H. 2.3:2800C,8
 Lapp, Ralph E. 2.3:2400A,11
 Lark-Horowitz, K. 2.3:1900,3
 Laronde, M. 2.3:3000D,2
 Larson, C. A. 2.3:3000A,7
 Lauber, R. 2.3:1430C,6,S
 Lauer, Henri 2.3:1330A,7
 Lauher, V. A. 2.3:3200A,13
 Laurila, Simo 2.3:1570,8
 Laurmann, J. A. 2.3:3000A,3
 Lavine, Irvin 2.7:I100,6
 Lawrence, H. R. 2.3:1800,7
 Lawson, J. L. 2.3:2300,24
 Lawson, W. D. 2.3:1530B,3
 Lax, Benj. 2.3:1730A,18
 LC 2.2:B100,6; 2.2:B300,2,3,9; 2.6:G100,
 10; 2.6:G300,3,5; 2.7:I100,10; 2.7:I300,
 1,3,4,6
 League of Nations 2.7:I100,1
 Lebacqz, J. V. 2.3:2300,5
 Leck, J. H. 2.3:2500A,4
 Lederer, Edgar 2.3:3200C,3
 Lederer, Michael 2.3:3200C,3
 Ledgerwood, Byron K. 2.3:1300A,2;
 2.3:1330A,11
 Ledley, Robert S. 2.3:1430A,5
 Lee, L. K. 2.3:1530B,9
 Leeds-Northrup 2.2:B100,15
 Lees, L. 2.3:1800,7
 Lees, Sidney 2.3:1200A,16
 Legal, J. 2.3:2900C,1
 Le Galley, Donald P. 2.3:1830A,4
 Leinweber, Paul 2.3:3500,1
 Leitner, A. 2.3:1000C,7
 Lengyel, Bela A. 2.3:2100A,4
 Leondes, C. T. 2.3:1300A,16; 2.3:1330A,

3. Author Index (Cont.)

- Leonhard, A. 2.3:1300C,5
Lepretre, Robert 2.3:1730C,16
Lesnick, R. N. 2.3:1330A,7
Lever, Arnold E. 2.3:3600,1
Levine, Daniel 2.3:1770A,10
Lewis, Bernard 2.3:1800,7; 2.3:2800B,5
Lewis, Ian A. D. 2.3:1500,18;
 2.3:2700,2
Lewis, Walter W. 2.3:1600A,2
Leybold 2.3:2500C,2
Leymonie, C. 2.3:3300,9
Lhoste, G. 2.3:1400C,5
Licht, Sidney H. 2.3:3400A,21
Liebermann, David 2.3:3000D,3
Likhtman, V. I. 2.3:3300,3
Lin, C. C. 2.3:1800,7
Lindorf, H. 2.3:2800C,2
Lingane, J. J. 2.3:3200A,23
Linville, John C. 2.3:1560A,14
Lion, K. S. 2.3:1230A,16
Lissner, H. R. 2.3:1230A,11
Livanov, Mikhail N. 2.3:3400D,2
Livingood, John J. 2.3:2400A,1
LKB 2.9:P170,3
Llewellyn-Jones, Frank 2.3:1600B,1
Lo, Arthur W. 2.3:1560A,8
Locke, A. S. 2.3:1800,17
Loemann, D. 2.3:2200,10
Losev, D. P. 2.3:1330D,2
Louisell, William H. 2.3:1530A,13
Lowe, Fritz 2.3:3400C,1
Lukens, H. R. 2.3:2300,31
Lukomskaya, A. M. 2.2:B400D,4
Lurch, E. Norman 2.3:1500,23
Lynch, William A. 2.3:1500,17
Lyntel, Allen H. 2.3:2100A-S2
Lynton, Ernest A. 2.3:1670-S
Lyons, J. W. 2.3:3000A-S
Lytel, Allan 2.3:1500,2
- MacDonald, David K. C. 2.3:2800A,1;
 2.3:2900B,5
Machei, Bruno 2.3:1370A,3
Machol, R. E. 2.3:1300A,3
Mackenzie, J. D. 2.3:2800B,4
Macmillan, R. H. 2.3:1300B,1
MacNichol, Edward F. Jr. 2.3:2300,20
Macomber, George R. 2.3:1800-S2;
 2.3:1830A,10
MacRae, Duncan Jr. 2.3:2300,21
- Magarshak, B. G. 2.3:1600D
Magne, P. 2.3:1500,18
Magnon, C. 2.3:2170,18
Maitre, A. 2.3:1230B,6
Makaelyan, A. L. 2.3:1770D,1
Malone, Thomas F. 2.3:2000,8
von Mangoldt, W. 2.3:1000C,1; 2.3:1300C,7
Manning, L. A. 2.2:B300,10; 2.2:B400A,7
Mannino-Patane, G. 2.3:1500,11
Mantell, Charles L. 2.3:1000A,7
Marconi 2.9:P730,1; 2.9:P770,3
Marconi Instruments 2.9:P170,1
Marcus, Mitchell P. 2.3:1630A,3
Marcuvitz, Nathan 2.3:2300,10
Marechal, A. 2.3:2100C,5
Mariner, P. F. 2.3:1700A,11
Markle, Lewis E. 2.3:1330A,6
Markus, John 2.3:1300A,6; 2.3:1330C,5
Marr, Eleanor B. 2.6:G200,5
Marsden, C. P. 2.3:1730A,5
Martin, A. V. J. 2.3:1560C,4
Martin, Louis C. 2.3:2100B,1
Marton, C. 2.2:B300,1
Marton, L. 2.3:1900,3
Maryland 2.2:B400A,10
Mason, Clyde W. 2.3:3200A,22
Mason, Samuel J. 2.3:1530A-S;
 2.3:1570,7
Mason, Warren P. 2.3:1630A,1;
 2.3:2600,3
Massey, H. S. W. 2.3:1570,1
Massie, Edw. 2.3:3400A,20
Massonet, C. 2.3:3600,15
Masterson, L. E. 2.3:1330A,7
Maughan, G. I. 2.2:B200,9
Maunder, Leonard 2.3:2900B,4
Mayer, Robert W. 2.3:1300A,15;
 2.3:1330A,4
Mayer-Kaupp, H. 2.3:3300,11
Mayo-Wells, W. J. 2.3:1830A,11
MB 2.9:P1550,17
MBLE 2.9:P600C,5
McAllister, A. S. 2.3:3700,3
McClintock, R. M. 2.2:B400A,1
McClure, Connie L. 2.3:1830A,21
McCorkle, W. H. 2.3:2400A,2
McFee, R. H. 2.3:2800A,4
McGill, D. A. C. 2.3:1400A,11
McGlauchlin, L. D. 2.3:1770A,2
McIntyre, R. L. 2.3:1370A,10
McKay, Walter 2.3:1200A,16

3. Author Index (Cont.)

- McKenzie, A. A. 2.3:2300,4
McKinley, James L. 2.3:1830A,12,19
McMaster, Robert C. 2.3:3600,14
McQuistian, R. B. 2.3:1770A,2
Mead, H. J. 2.3:1700B,2
Mees, C. E. K. 2.3:2200,2
Meetham, A. R. 2.3:1100,8
Meghrebian, Robert V. 2.3:2400A,12
Meinke, H. 2.3:1700C,2
Mellon, M. Guy 2.3:2130,5;2.6:G200,6
de Mende, S. 2.3:3200C,4
Mentzer, J. R. 2.3:1500,18
Merrill, G. 2.3:1800,17
Merritt, L. L. Jr. 2.3:2100A,11
Meshchenskii, Rostislav 2.3:3400D,6
Mesritz, A. D. 2.3:1630C,S
Messiah, A. 2.3:2900C,3
Meyer, Erich A. H. 2.3:1630C,7
Meyer-Eppler, W. 2.3:1300C,10
Meyerhoff, Albert J. 2.3:430A,17
M-H 2.9:P170,10
Mialki, Werner 2.3:2400C,7
Michel, A. 2.3:2100C,13
Michel, Kurt 2.3:2200,10
Michels, Walter C. 2.3:1600A,9
Michelson, I. 2.3:1800,17
Michiels, J. L. 2.3:1700C,9
Mich. State Col. 2.3:1200A,11;2.3:3400A,2
Middlebrook, R. D. 2.3:1560,S1
Middleton, David 2.3:1700A,2
Middleton, Robert G. 2.3:1530A,2,17
Middleton, W.E.K. 2.3:1270,12;2.3:2000,6
Mikklin, Solomon G. 2.3:1900,1
Mikolajczyk, Pjotr 2.3:1560D,2
Mileaf, Harry 2.3:1500,14
Miller, A. R. 2.3:2800A,2
Miller, J. R. 2.3:1560A,4
Miller, R. E. 2.3:1300A,11
Milligan, W. 2.3:2300,45
Minder, Walter 2.3:2300,33
Ministero dell'Industria e Commercio
2.8:P100,15
Minorsky, Nicholas 2.3:3100,12
Mirskei 2.3:1530D,S4
von Mises, Richard 2.3:3000A,9
Mishkin, Eli 2.3:1370A,2
MIT 2.3:1330A,13;2.3:1530A,6,7;
2.3:1800,9;2.3:2300,28;2.3:2800A,17;
2.3:3100,9;2.4:D,4;2.9:P400,12
Mitsubishi Electric Co. 2.9:P570,1
Moerder, Curt 2.3:1630C,7
Moffitt, J. K. 2.3:1730A,5
Mohrhardt, F. E. 2.6:G200,S
Monch, Ernst 2.3:2100C,16
Monch, Guenther 2.3:2500C,3
Monk, G. S. 2.3:2400A,2
Monteil, C. 2.3:1300C,6
Montgomery, C.G. 2.3:2300,8,11,14
Moon, Parry H. 2.3:1900,6
Moore, C. K. 2.2:B300,5;2.2:B400B,2
Morand, Max 2.3:2500C,7
Morgan, Russell H. 2.3:3400A,18
Morgenstern, Dietrich 2.3:2900C,15
Morley, Derek W. 2.3:1400B,1
Morrison, R. B. 2.3:1800,16
Morrow, Charles T. 2.3:3100,S
Morse, Philip M. 2.3:1100,2
Morton, G. A. 2.3:2170,12
Moser, H. 2.3:2130,2
Moss, T. S. 2.3:1550B,1
MPI 2.2:B400C,7
MRI 2.9:P770,7
Muirhead and Co., Ltd. 2.9:P170,7
von Munche, W. 2.3:1560C,5
Murray, Francis J. 2.3:1430A,12
Mutter, E. 2.3:2200,10
NACA 2.9:P300A,13
NACE 2.1:A600,2
Nadai, Arpad 2.3:2900A,21
Nadler, Morton 2.3:1500,18
NAS 2.9:P1600,13
NASA 2.1:A300,11;2.1:A600,4,16;
2.3:2000,9;2.9:P300A,13
Naslin, P. 2.3:1230C,5;2.3:1400C,2
NAS-NRC 2.1:A300,8;2.1:A700,2;
2.3:1270,17;2.3:1400A,3;2.3:1830A,14;
2.4:D,7;2.6:G100,3,4;2.6:G300,1;
2.7:I200,5;2.9:P400,10;2.9:P1000A,2;
2.9:P1050,18
Nauk 2.1:A100,8;2.2:B200,11;2.2:B300,6;
2.2:B400D,2,4;2.3:1400D,2,S;2.3:1430D,
3;2.3:1550D,1,2,4,5;2.3:1770D,2;
2.3:1830D,2;2.3:2170,10;2.3:2400D;
2.3:3300,3;2.3:3400D,4;2.9:P250D,5;
2.9:P300D,3;2.9:P400D,2;2.9:P800,6;
2.9:830D,2;2.9:P870,7;2.9:P1000D,5,7
2.9:P1050,18;2.9:P1100D,2,3
Naumann, Helmut 2.3:2100C,19
NAVORD 2.3:2600,13

3. Author Index (Cont.)

- NBS 2.2:B100,3,13,16,18,19;2.2:B300,1;2.2:B400A,1,2,4;2.3:1230A,10;2.3:1500-S;2.3:1600A,8,S;2.3:1730A,5;2.3:2500A,5,7,11,16;2.3:2800A,6,8;2.3:3000A,1;2.3:3200A,5;2.3:3500,7,9,11;2.3:3700,2,3;2.7:I300,11;2.9:P200,7;2.9:P730,11,18;2.9:P1500,8,12;2.9:P1550,8;2.9:P1600,3
NCO-TNO 2.9:P1200C,6
Nederlands Radiogenootschap 2.9:P730,8
Nederlandse Vereniging voor Fijnmechanische Techniek 2.9:P100C,10
Neeteson, P. A. 2.3:1560C,8;2.3:1730C,13
NEF 2.9:P530,12
Neff, H. 2.3:3200C-S
Nestler, C. G. 2.3:3300,1
Neugebauer, Constantine 2.3:2900A,20
Neumann, Hans 2.3:1230C,2;2.3:1630C,4
Newell, Homer E. 2.3:1830A,3
Newkirk, J. B. 2.3:2900A,20
Newman, David 2.3:1800,17
NFS 2.9:P1100C,2
NFSAIS 2.6:G300,6,7
Nichols, Myron H. 2.3:1730A,14
Nichols, N. B. 2.3:2300,25
NIDR 2.2:B400C,6;2.7:I100,8
Niedergall, W. 2.2:B400C,1
Nielsen, A. K. 2.3:2600,18
Nielsen, Jack N. 2.3:1830A,15
Nielsen, S. 2.3:1530B,3
Nightingale, Alfred 2.3:3400B,4
NIH 2.5:D100A,7
Nitzsche, Rudolf 2.3:3600,3
Nixon, W. C. 2.3:2170,7
NLL 2.7:I300,10
NLM 2.1:A100,2
Noebels, H. J. 2.3:3200A,20
Nogare, Stephen Dal 2.3:3200A,1
Nokes, Malcolm C. 2.3:2300,42
Nordenberg, Harold M. 2.3:1500,1;2.3:1530B,8
Northwestern 2.3:2900A,11
Nottingham, Wayne B. 2.2:B300,4
Novozhilov, V. V. 2.3:2900D,1
NPL 2.9:P1150B,2
NRC 2.6:G300,1
NRLM 2.9:P1500,3
NSF 2.6:G100,7
Nurnberg, Werner 2.3:1670,7
Nyboer, Jan 2.3:3400A,4
NYSEM 2.2:B100,8
OAR 2.2:B100,22
Odinetz, M. 2.3:1330D,3
O'Diselin, C. J. 2.3:1270,17
Odishaw, Hugh 2.3:1000A,3
Odqvist, Folke K. G. 2.3:3300,12
OECD 2.9:P1200C,12
Oeser, Werner 2.3:1270,11
Oesterreichisches Patentamt 2.8:P100,19
Oetker, R. 2.3:1300C,7
Office for Industrial Property 2.8:P100,1
Office of the Registrar 2.8:P100,7
O'Keefe, John 2.3:3500,2
O'Kelley, G. D. 2.3:1400A,3
Okress, E. 2.3:1730A,16
Ollendorff, Franz 2.3:1500,24
Olson, Harry F. 2.3:2900A,2
Olson, W. T. 2.3:1800,7
ONERA 2.9:P300C,3
ONR 2.3:1300A,5;2.3:1400A,10;2.3:1430A,7,12;2.3:1570,2;2.9:P200,2
Oppell, J. B. 2.3:3000A,6
Oppelt, Winfried 2.3:1300C,3
Ordung, P. F. 2.3:1700A,1
Ordway, Frederick I. 2.3:1830A-S1, S2
Orlov, Vladimir V. 2.3:3400D,4
ORSA 2.9:P200,5
OSA 2.3:2100A,13;2.9:P830A,1,9;2.9:P830D,1
Osterburg, H. 2.3:2170,11
Oswatitsch, Klaus 2.3:3000C,2
OTS 2.1:A100,6,11;2.2:B400D,1;2.3:1230D,1;2.3:1400A,3;2.3:1430A,15;2.3:1730A,9;2.3:2100C,3;2.3:2900D,1;2.6:G200,8;2.7:I300,3,5;2.8:P200,3,4,S;2.9:P900D,5
Otting, W. 2.3:3300,11
Ouziaux, R. 2.3:2900C,5
Overhage, Carl F. J. 2.3:1500,9
Owens, H. L. 2.3:1560A,7
Pai, Shih I. 2.3:2900A,13,18
Painter, Christa A. 2.3:2600,16
PAL 2.1:A600,7
Palm, Albert 2.3:1230C,9;2.3:1630C,8
Papin, M. B. 2.3:1000C,6;2.3:3500,13
Parke III, Nathan G. 2.6:G200,4

3. Author Index (Cont.)

- Parsons, A. R. 2.3:1270,1
Partridge, Gordon R. 2.3:1230A,12
Parvin, R. H. 2.3:1800,17
Patent Office 2.8:P100,14
Patent Office (Australia) 2.8:P100,14
Patenttidende, Dansk 2.8:P100,2
Pattee, H. H. Jr. 2.3:2170,17
Patterson, Austin M. 2.6:G200,5
Paul, G. 2.3:1730C,10
Paul, William 2.3:2500A,12
Pavlik, Ernst 2.3:1370A,3
Payne, L. D. 2.3:1530A,17
Payne, L. M. 2.6:G100-S
PDC 2.1:A600,10
Pearlstein, Joseph 2.6:G200,8
Peiser, H. S. 2.3:2100B,9
Pelczewski, W. 2.3:1330D,1
Pelegrin, M. 2.3:1300C,8;2.3:1430C,3
Pender, Harold 2.3:1000A,24
Penescu, C. I. 2.3:1300D,9
Penfield, Paul, Jr. 2.3:1530A,6
Penn 2.3:1670,19
Penn. State Univ. 2.2:B400A,6
Pepe, P. 2.3:1400C,5
Pericorne, L. 2.3:1560C,6
Perkins, C. D. 2.3:1800,4
Perlat, A. 2.3:2100A,2
Perrier, J. 2.3:2900C,5
Perry, Charles C. 2.3:1230A,11
Perry, Robert H. 2.3:1000A,1
Persoz, B. 2.3:3000C,3
Peskin, Edward 2.3:1670,4
Peters, Johannes 2.3:1370C,1
Petit, M. 2.3:2100A,2
Petitclerc, A. 2.3:1550C,5
Pettit, J. M. 2.3:1500,12
Peuteman, A. 2.3:1330C,7
Pfeiffer, Paul E. 2.3:1570,9
Pflier, Paul M. 2.3:1230C,11,14
Philippow, E. 2.3:1700C,3
Philips 2.3:1230C,1;2.3:1550C,8;
2.3:1730C,13;2.3:2100C,1;2.9:P170,
11;2.9:P570,10;2.9:P600C,6,11;
2.9:P700,13,15;2.9:P1150C,1
Phillips, J. P. 2.3:3200B,3
Phillips, Ralph S. 2.3:2300,25
Phister, Montgomery Jr. 2.3:1430A,3
Photoelectric and Spectrometry Group
2.9:P830B,9
Physical Society 2.9:P1100B,1
Pierce, John A. 2.3:2300,4
Pierce, John R. 2.3:1530A,21;
2.3:1770A,1
Pietsch, H. 2.5:D100C,4
Pinsker, Z. G. 2.3:2170,16
Pinta, M. 2.3:3200C,7
Pirani, M. 2.3:2500B,3
Pitman, George R. Jr. 2.3:1270,2
Pitsch, Helmut 2.3:1700C,10
PL 2.3:2900B,3
Plass, G. N. 2.3:2800A,4
Polgar, Claude 2.3:1330C,8
Polish Academy of Sciences 2.3:1730D,6
Pollak, L. W. 2.3:1900,9
Pollard, Ernest C. 2.3:3400A,16
Polydoroff, W. J. 2.3:1600A,6
Popov, Evgenii P. 2.3:1300D,4,11
Popplewell, Cicely M. 2.3:1400B,4
Poschl, Hermann 2.3:2900C,13
POSL 2.8:Pa200,4,9;2.8:Pa400,1
Post Office Electrical Engineers
2.9:P730,17
Potter, N. S. 2.3:1800,17
Pound, Robert V. 2.3:2300,16
Povejsil, Donald J. 2.3:1730A,8;
2.3:1800,17
Prandtl, Ludwig 2.3:3000B,2
Prensky, Sol D. 2.3:1530A,14
Pressman, A. I. 2.3:1430A,13
Priester, Wolfgang 2.3:1800,S3;
2.3:1830A,22
Princeton 2.3:3400A,17
Pringsheim, Peter 2.3:2100A,14
Probstein, R. F. 2.3:3000A,16
Profos, Paul 2.3:1370C,6
PS 2.1:A400,2;2.5:D100B,2;2.9:P1100B,1
PS (Japan) 2.9:P1100D,7
PSAC 2.6:G100,12
PTB 2.9:P1500,7
PTT 2.9:P730,6
Puckett, Allen E. 2.3:1830A,2
Puerschner, K. 2.3:1630A,7
Pupp, Wolfgang 2.3:2500C,5
Purcell, Edward M. 2.3:2300,8
Purdue 2.4:D,3
Purnell, Howard 2.3:3200A,21
Purves, Frederick 2.3:2200,4
- Quinet, J. 2.3:1530C,13

3. Author Index (Cont.)

- Rabinowicz, E. 2.3:3200A,S₄
Raby, K. F. 2.3:1100,7
Radix, J. C. 2.3:1830C
Rae, William N. 2.3:3200A,19
RAeS 2.9:P300B,1
Rafuse, R. P. 2.3:1530A,6
Ragan, George L. 2.3:2300,9
Raievski, V. 2.3:2400C,3
Raimes, Stanley 2.3:3300,2
Raizer, Yu. P. 2.3:2300,S₆
Ramat, G. 2.3:2900C,7
Ramberg, E. G. 2.3:1670,13;2.3:1770A,
 3;2.3:2170,12
Ramo, Simon 2.3:1300A,12;2.3:1830A,2
Rand 2.3:1830A,6
Randall, Jas. E. 2.3:1200A,6
Rapaport, H. 2.3:1770A,11
Rapuzzi, Ann E. 2.3:3700,3
RAS 2.9:P1000B,1
Rastorguev, L. N. 2.3:3300,S
Ratoosh, Philburn 2.3:3500,5
Rauch, L. L. 2.3:1730A,14
Rauen, H. M. 2.3:3300,11
Ravalico, D. E. 2.3:1730C,6
Raven, Robert S. 2.3:1730A,8
RCA 2.3:1000B,3;2.3:1530A,18;
 2.3:1670,19;2.9:P730,4
Rebinder, P. A. 2.3:3300,3
Redwood, Martin R. 2.3:1730A,22
Reethof, Gerhard 2.3:3000A,12
Reich, Herbert J. 2.3:1630A,12;
 2.3:1700A,1
Reicherter, Georg 2.3:3600,10
Reilley, Charles N. 2.3:3200A,7
Reilly, Joseph 2.3:3200A,19
Reimann, A. L. 2.3:2500B,1
Reimer, Eduard 2.8:P_a300,11
Reimer, Ludwig 2.3:2170,6
Reinbach, R. 2.3:1550C,7
Reiner, Markus 2.3:3000A,4,17
Reiter, Elmar R. 2.3:2100A,1
Research Assoc'n in Production
 Engineering 2.9:P450D,3
Rhys, Jack 2.3:3600,1
RIAM 2.9:P450D,9
Richards, O. W. 2.3:2170,11
Richards, R. G. 2.3:2800A,4
Richards, R. K. 2.3:1430A,14
Richardson, Edward G. 2.3:2600,5,19
Richardson, K. I. T. 2.3:2900B,3
Richter, Heinz 2.3:1530C,9;
 2.3:1560C,1;2.3:1570,3
Richter, Otto 2.3:2900C,11
Riddle, Robert L. 2.3:1560A,13
Ridenour, Louis N. 2.3:1900,4;
 2.3:2300,1,28
Rideout, Vincent C. 2.3:1730A,12
Rider, John 2.3:1530A,1,15
Riegel, E. R. 2.3:3200A,9
RILEM 2.9:P1400,5
Riordan, John 2.3:1330A,8
Rips, R. E. 2.7:I300,9
Ristenbatt, M. P. 2.3:1560A,13
RMIS 2.9:P330B,3
RMS 2.9:P1050,8
Robert, J. 2.3:1430C,7
Roberts, Arthur D. 2.3:2300,3;
 2.6:G100,1
Roberts, J. K. 2.3:2800A,2
Roberts, Richard W. 2.3:2500A,S
Robertson, J. M. 2.9:P700,16,17,18
Robichaud, L. P. A. 2.3:1430C,7
Robstein, Ronald F. 2.3:3000D,1
Rogers, A. E. 2.3:1430A,4
Rollwagen, W. 2.3:3300,11
Rooksby, H. P. 2.3:2100B,9
Rossi, B. B. 2.3:2400A,2
Rossini, Frederick D. 2.3:1800,7;
 2.3:2800A,16,18
Rossoff, A. L. 2.3:1560A,18
Roth, Heinz 2.3:1230C,9,16
Rothe, Edmond 2.3:2000,4
Rothe, J. P. 2.3:2000,4
Rouse, Hunter 2.3:2900A,16
Royds, Robert 2.3:2800B,3
RPS 2.1:A700,9;2.9:P830B,7,8
RSL 2.9:P1600,15
RTI 2.1:A300,11
Rüdenberg, R. 2.3:1600C,S
Rudinger, George 2.3:3000A,15
Ruiter, Jacob H., Jr. 2.3:1530B,6
Runge, W. T. 2.3:1700C,11
Rurukawa Electric Co. 2.9:P570,9
Rusche, Georg 2.3:1560C,9
Rush, Philip 2.3:3500,2
Ruthardt, K. 2.3:3300,11
Ryder, E. A. 2.3:2800A,5
Ryvkin, S. M. 2.3:1550D,S₃

SAA 2.9:P1550,12

3. Author Index (Cont.)

- Sabathe, P. 2.3:2600,13a
SAC 2.1:A500,3
SAE 2.9:P1200A,1
Sage, B. H. 2.3:3000A,6
Sagel, K. 2.3:3300,11
Salisbury, J. K. 2.3:1000A,26
Salow, H. 2.3:1560C,5
Samburoff, S. N. 2.3:1830D,1
Sammer, F. 2.3:1700C,3
Samukawa, T. 2.3:1300D,2
Sandretto, Peter C. 2.3:1800,2
Sands, M. 2.3:2400A,2
Sanford, Raymond L. 2.3:1500,S;
 2.3:1600A,S
Sangren, Ward C. 2.3:1430A,11;
 2.3:2400A,10
Sarbacher, Robert I. 2.3:1000A,22
SAS 2.3:2130,19;2.9:P830A,5
Sass, F. 2.3:1000C,7
Savant, C. J. Jr. 2.3:1330A,5;
 2.3:1800,11
Savidan, M. 2.3:3200C,5
Scaff, J. H. 2.3:1560A,3
Scarborough, James B. 2.3:2900A,6
Schaauffs, Werner 2.3:2600,17
Schack, Alfred 2.3:2800C,6
Schiott, H. 2.3:2900C,9
Schlegel, H. R. 2.3:1560C,2
Schlitt, Herbert 2.3:1400C,7;
 2.3:1700C,1
Schlosser, E. G. 2.3:1230C,9,16
Schmeckebier, Laurence F. 2.6:G100,13
Schmiedel, Karl 2.3:1230C,13
Schneider, E. E. 2.3:2400C,6
Schneider, Rudolf 2.3:1230C,10
Schoenert, K. 2.3:3300,10
Schram, Eric 2.3:2300,S1
Schreiber, H. 2.3:1730C,1
Schroeder, Robert 2.3:2100C,17
Schröter, F. 2.3:1730C,S
Schuettler, C. L. 2.2:B400A,11
Schultz, H. L. 2.3:1900,3
Schwartz, Seymour 2.3:1550A,3
Schweitzer, Helmut 2.3:1770C,7
Schweizerisches Patentamt 2.8:Pal00,9;
 2.8:Pa200,7
Schwerdtfeger, Werner 2.3:2300,40
Schwidefsky, Kurt 2.3:2200,12
Schwier, K. 2.3:2800C,3
Scoff, J. H. 2.3:1560A,12
Scott, Norman R. 2.3:1430A,1
Scott, Thomas R. 2.3:1560B,1
Seaman, William 2.3:3200A,18
Sears, W. R. 2.3:1800,7
Secretaria de Industria y Comercio
 2.8:Pal00,23
Sedov, Leonid I. 2.3:2900D,2
SEE 2.9:P530,5
Seely, Fred B. 2.3:2900A,14
Seely, Samuel 2.3:1530A,19
Segre, Emilio 2.3:2400A,4
Seifert, Howard S. 2.3:1830A,23
Seifert, Wm. W. 2.3:1300A,9
Seith, V. I. 2.3:3300,11
Sells, S. B. 2.2:B400A,12
Selwood, Pierce W. 2.3:3200A,17
SEM 2.9:P830D,3
Semenov, A. A. 2.3:1770D,S
Service de la Propriete Industrielle
 2.8:Pal00,18
SESA 2.9:P450A,1;2.9:P1400,15
Seshu, Sundaram 2.3:1600A,3
Sesonske, Alexander 2.3:2400A,9
Setlow, Richard B. 2.3:3400A,16
SFM 2.9:P450C,4
SFP 2.5:D100C,6
Shaftan, Kenneth 2.3:2200,6
Shannon, Claude E. 2.3:1400A,2
Shapiro, Ascher H. 2.3:3000A,5
Sharp, G. H. 2.3:3500,15
Sharpe, M. R. 2.3:1830A,S1,S2
Shchukin, E. D. 2.3:3300,3
Shea, Richard F. 2.3:1560A,1,11
Shearer, J. L. 2.3:3000A,12
Shigley, Joseph E. 2.3:2900A,8
Shirane, Gen 2.3:1730A,10
Shive, John N. 2.3:1550A,1;
 2.3:1560A,3,12
Shmakov, P. V. 2.3:1770D,6
Shockley, William 2.3:1550A,7
Shoop, Charles F. 2.3:2900A,12
Shorr-Kon, J. J. 2.3:2900D,1
Shwop, J. E. 2.3:1550A,5
SI 2.1:A700,14
SIAM 2.3:1330A,8;2.9:P400,1
SICF 2.9:P1200C,10
Siebel, Erich 2.3:3600,2a
Siegbahn, Kai 2.3:2300,36
Siemens 2.9:P570,8
SIF 2.9:P1150C,2
Siff, Elliott J. 2.3:1230A,4
Silsbee, Francis 2.3:1600A,8

3. Author Index (Cont.)

- Silver, Samuel 2.3:2300,12
 Simon, H. 2.3:1670,14; 2.3:1800,13
 Singer, Jerome R. 2.3:1730A,17
 Sinyarev, B. 2.3:1830D,1
 SIT 2.3:1370A,8; 2.9:P100B,4
 SIT (Japan) 2.9:P100D,2
 SITA 2.9:P100B,5
 Sjobbema, D. J. W. 2.3:1560C,10
 Skakov, Yu. A. 2.3:3300,S
 Skalnik, J. G. 2.3:1700A,1
 Skinner, H. A. 2.3:2800A,16
 Skolnik, Merrill 2.3:1730A,20
 Skorik, E. T. 2.3:1730D,4
 Skudrzyk, Eugen 2.3:2600,7
 SLA 2.6:G100,9; 2.7:I300,3
 Slater, J. M. 2.3:1830A,8a
 Slawsky, M. M. 2.3:2900A,11
 Slichter, Charles P. 2.3:1600A,1
 Smakula, Alexander 2.3:1730C,17;
 2.3:2100C,15
 SMF 2.3:2900C,9
 Smirnov, Gennadii D. 2.3:1430D,1
 Smit, J. 2.3:1550C,8
 Smith, Arthur W. 2.3:1600A,10
 Smith, C. S. 2.3:1900,7
 Smith, Donald A. 2.3:3400A,14
 Smith, Ivor 2.3:3200B,2
 Smith, James O. 2.3:2900A,14
 Smith, M. L. 2.3:2130,13
 Smith, Ralph W. 2.3:3500,9
 Smith, Wm. A. 2.7:I100,4
 Smith, William V. 2.3:2130,1
 Smithsonian 2.3:1000A,5
 SMPTE 2.9:P830A,10
 Smullin, Louis D. 2.3:1530A,7;
 2.3:2300,14
 Snel, D. A. 2.3:2600,15
 Snell, Arthur H. 2.3:2400A,8
 Snell, Cornelia T. 2.3:3200A,11
 SNT 2.9:P1400,1
 Societe francaise des electriciens
 2.9:P530,9
 Societe hydrotechnique de France
 2.3:2900C,17
 Societe royale belge des electriciens
 2.9:P530,3
 Societe suisse de chronometrie
 2.9:P100C,8
 Society of Instrument and Control
 Engineers 2.9:P100D,4
 Society of Precision Mechanics
 2.9:P1450D,8
 Soisson, Harold E. 2.3:1230A,13
 Sokoll, A. H. 2.2:B400C,5
 Soller, Theodore 2.3:2300,22
 Solloway, G. B. 2.3:1800,11
 Solodovnikov, V. V. 2.3:1300D,3,8,10
 Soohoo, Ronald F. 2.3:1730A,2
 SOPRODOC 2.9:P900C,2; 2.9:P1300,5
 Soroka, Walter J. 2.3:1430A,10
 SOTELEC 2.9:P770,8
 Sotskov, B. S. 2.3:1300D,1
 Soubies-Camy, H. 2.3:1400C,1
 South African Patent Office 2.8:P100,
 Soutif, M. 2.3:3200C,10
 Soviet Radio 2.3:1730D,1,3,7;
 2.3:1770D,6
 SPEE 2.9:P1200A,12
 Speiser, A. P. 2.3:1430C,1
 Spencer, D. E. 2.3:1900,6
 Spencer, Jas. 2.3:1230A,1
 Spencer, K. J. 2.2:B300,5; 2.2:B400B,2
 Spenke, Eberhard 2.3:1550C,3
 Sperry 2.9:P170,9; 2.9:P1150A,5
 SPIE 2.3:2200,6; 2.9:P100A,3;
 2.9:P1200A,12
 Spilhaus, A. E. 2.3:1270,12;
 2.3:2000,6
 Spink, J. A. 2.3:2170,16
 Spink, Leland K. 2.3:3000A,13
 Spratt, Hector G. M. 2.3:1630B,1
 SPSE 2.1:A700,12; 2.9:P830A,12
 SRI 2.6:G300,2
 SSA 2.9:P1050,12
 SSC 2.9:P130,3
 SSJ 2.9:P1050,1
 Stacy, Ralph W. 2.3:3400A,5,8
 Stamm, W. 2.3:3300,11
 Stanford 2.2:B300,10; 2.2:B400A,7
 Starr, Merle A. 2.3:2300,22
 Statensprovningsanstalt 2.9:1400,9
 Staub, H. H. 2.3:2400A,2
 Stearns, Reid F. 2.3:3000A,7
 Steedman, Hugh F. 2.3:2170,8
 Steeg, C. W. 2.3:1300A,9
 Stein, Peter K. 2.3:1230A,5
 Steinbuch, Karl 2.3:1000C,8;
 2.3:1300C,4,13; 2.3:1400C,6
 Steinherz, H. A. 2.3:2500A,13
 Stewart, H. L. 2.3:1370C,3

3. Author Index (Cont.)

- Stille, Ulrich 2.3:1400C,9
Stiltz, Harry L. 2.3:1830A,9
Stoker, J. J. 2.3:3100,4
Stopskii, S. B. 2.3:2600,9
Storm, H. F. 2.3:1730A,7
Stout, Melville B. 2.3:1600A,11
Stratton, P. P. 2.3:2100D
Straw, H. 2.3:2130,9
Strecker, Felix 2.3:1300C,2
Strock, Clifford 2.3:1000A,19
Strong, H. M. 2.3:2500A,14
Studemann, H. 2.3:3300,6
Studer, Jack J. 2.3:1530A,4
Stuper, Josef 2.3:2200,10
Sturm, B. 2.3:3200C,9
von Stutterheim, H. 2.5:D100C,3
Styret for det Industrielle Rettvern
 2.8:Pa100,21
Sucher, Max 2.3:1000A,S
Suchet, J. P. 2.3:1550C,6
Suhrmann, R. 2.3:1670,14
Sullivan, H. J. 2.3:1550A,5
Summer, W. 2.3:2100A,3;2.3:2100B,6
Summerfield, M. 2.3:1800,7
Susini, Alfredo 2.3:1330C,9
Susskind, Charles 2.3:1500,25
SVMT 2.9:P1400,11
Svoboda, Antonin 2.3:2300,27
Sward, G. G. 2.3:3600,2
Sweeney, R. J. 2.3:1200A,4
Swenne, C. M. 2.3:1530C,3
Swift, J. D. 2.3:1530C,S
Szabo, I. 2.3:2900C,15
- Taeger, W. 2.3:1730C,10
Taft, W. A. 2.3:1700C,3
Takahashi, Y. 2.3:1370D,1
Talbot, L. 2.3:3000A,3
Tanenbaum, M. 2.3:2800A,14
Taplin, J. F. 2.3:1300A,4
Tatarski, Valerian I. 2.3:1770D,3
Taylor, S. R. 2.3:3200A,14
TCU 2.2:B400A,12
TELE 2.9:P730,12
Television Society 2.9:P830B,6
Terent'ev, S. P. 2.3:1730D,5
Terman, F. E. 2.3:1500,12
Terny, Michel 2.3:2800C,4
Thaler, G. J. 2.3:1300A,14;2.3:1330A,1
Thalmann, G. 2.3:1530C,11
- Thewlis, J. 2.3:1100,8
Thomas, Gareth 2.3:2170,14;2.3:3300,4
Thornton, David L. 2.3:3100,10
Thourel, L. 2.3:1730C,5,15
Threlkeld, James L. 2.3:2800A,12
Thurin, Jacques 2.3:1530C,4
TI 2.1:A300,4;2.8:Pa300,5
Timoshenko, Stephen 2.3:3100,8
Tomer, Robert B. 2.3:1550A,6
Tong, Kin N. 2.3:3100,6
Torrey, H. C. 2.3:2300,15
Tou, Julius T. 2.3:1370A,11
Townes, Charles H. 2.3:1500,6
Townsend, G. E. 2.3:1800,S4;
 2.3:1830A,16
Trendelenburg, Ferdinand 2.3:2600,11
TRI 2.9:P1200A,10
Trillat, Jean J. 2.3:2100C,13
Troskolanski, Adam T. 2.3:3000D,2
Troup, G. J. F. 2.3:1730B,1
Troxell, G. E. 2.3:3600,9
Truitt, Robert W. 2.3:1800,1;
 2.3:3000A,11
Truxal, John G. 2.3:1330A,9;
 2.3:1500,17
TSentral'no Byuro Tekhnicheskoi
 Informatsii 2.8:Pa100,20,
 2.8:Pa200,5,10
Tsidil'kovskii, I. M. 2.3:1550D,3
Tsypkin, Ya Z. 2.3:1330D,3
Turner, Louis A. 2.3:2300,26
Tustin, Arnold 2.3:1300A,13;
 2.3:1330A,14
Tuve, George I. 2.3:2900A,12
Twyman, F. 2.3:1200B,4
Tybulewicz, A. 2.3:1550D,3
Tyson, Forrest C. Jr. 2.3:1200A,1
- UCLA 2.3:3400A,7
Ufimtsev, P. Ya. 2.3:1730D,7
Uhlenbeck, G. E. 2.3:2300,24
UKAEA 2.2:B200,9
UL 2.9:P1200A,5
UNESCO 2.3:1300C,1;2.3:1400B,4;
 2.3:2400C,5;2.7:I100,1;2.9:P1400,10
University of Leiden 2.9:P800,7
University of Tokyo 2.9:P250D,1
U. S. Army 2.2:B100,12;2.3:1700A,6
USDA 2.7:I200,3
USGS 2.1:A100,5

3. Author Index (Cont.)

- Uslan, S. D. 2.3:1530A,15
USNI 2.3:1900,2;2.3:2600,20
USPO 2.8:Pa100,3;2.8:Pa200,2,S;
2.8:Pa300,9
USSR, Council of Ministers
2.8:Pa200,5,10
- Vainshtein, B. K. 2.3:2170,10
Valdes, Leopoldo B. 2.3:1560A,15
Valle, Joseph M. D. 2.3:2900B,1
Valley, G. E. 2.3:2300,18
Valley, George E. Jr. 2.3:2300,22
Vallot, J. 2.3:1200C,3;2.3:3500,13
Vance, A. W. 2.3:2170,12
Vance, Robert W. 2.3:2800A,9
Vanderslice, T. A. 2.3:2500A,S
Van der Ziel, Aldert 2.3:1550B,2
Van Trees, Harry L. 2.3:1330A,13
Van Valkenburg, M. E. 2.3:1700A,12
VanVoorhis, S. N. 2.3:2300,23
Van Wazer, J. R. 2.3:3000A,S
Van Went, Johanna M. 2.3:3400B,2
Varga, Richard S. 2.3:1400A,6
Vavra, Michael H. 2.3:1800,3
VDE 2.3:1430C,2;2.9:P530,7,15
VDI 2.2:B200,3;2.2:B400C,4;2.3:3300,5;
2.9:P300C,7;2.9:P450C,6,7;2.9:P1200C,
3,5,7,8;2.9:P1400,12
VDMA 2.5:D100C,1
VDPG 2.1:A1400,7;2.9:P600C,1;2.9:
P1100C,9
Vermilyea, D. A. 2.3:2900A,20
Vernier, P. 2.3:1670,2
Vierling, Otto 2.3:2200,10
Vilbig, F. 2.3:1730C,8
VINSTIT 2.1:A100,8
Vinogradova, M. B. 2.3:1770D,S
VNIM 2.9:P1500,10
Voge, J. 2.3:1530C,8
Voigt, Theodor 2.3:2200,10
Volluz, R. J. 2.3:2600,13
Von Foerster, H. 2.3:1400A,10;
2.3:1570,2
Von Hippel, Arthur R. 2.3:1670,12
Voronov, Avenir A. 2.3:1430D,3
von Voss, Richard 2.3:2900C,11
Vuylsteke, Arthur A. 2.3:1730A,1
- WADC 2.3:1730A,9
WADD 2.3:1830A,8
Wade, Warren F. 2.2:B200,4
Wahlstrom, Ernest E. 2.3:2100A,6
Waidelich, Donald L. 2.3:1670,3
Wainwright, L. 2.3:1400A,7
Wait, E. 2.3:2300,43
Wait, James R. 2.3:1700A,9
Wakeford, R. C. 2.3:1830A,31
Wakerling, R. H. 2.3:2400A,2
Walcher, Theodor 2.3:1230C,12
Waldron, J. D. 2.3:2130,11
Waldron, Richard A. 2.3:1730A,21
Walford, Albert J. 2.6:G100,S
Walker, Gerald A. 2.3:1530B,2
Walker, Stanley 2.3:2130,9
Wallman, H. 2.3:2300,18
Walsh, Craig 2.3:1500,14
Walsh, John W. T. 2.3:2100B,3
Walsh, Thos. J. 2.3:3400A,20
Walston, Joseph A. 2.3:1560A,4
Ware, Willis H. 2.3:1430A,S
Warren, S. R. Jr. 2.3:3400A,12
Warschauer, D. M. 2.3:2500A,12
Wass, C. A. A. 2.3:1500,18
Wasserrab, Th. 2.3:1600C,8
Waterman, Peter J. 2.3:1730A,8
Waterman, Thos. E. 2.3:1000B,2
Watteeuw, H. 2.3:1270,16
Wawzonek, S. 2.3:3400D,3
WBAN 2.3:2500A,10
Weather Bureau 2.9:P1000A,3
Weaver, Warren 2.3:1400A,2
Wegner, Karl 2.3:1560C,9
Weik, Martin H. 2.3:1430A,16
Weinberg, F. J. 2.3:2100B,7
Weiner, Jerome H. 2.3:2800A,7
Weingraber, H. 2.3:1270,4
Weinmann, A. 2.3:1800,8
Weise, Harold 2.3:2200,10
Weiser, Peter B. 2.3:1830A,17
Weissberger, Arnold 2.3:3200A,15
Weitzsch, Fritz 2.3:1560C,9
Wellard, Charles L. 2.3:1530A,9;
2.3:1670,18
Wellinger, K. 2.3:3600,8
Wells, F. H. 2.3:1500,18;2.3:2700,2
Wentorf, R. H. 2.3:2500B,2
Werkmeister, G. 2.3:1630C,3
Werkmeister, Paul 2.3:1270,8
West, John C. 2.3:1370A,1

3. Author Index (Cont.)

- Western Electric 2.9:P700,9
Western Union 2.9:P700,7
Westinghouse 2.9:P570,6
Weyl, Charles 2.3:3400A,12
Wheeler, D. J. 2.3:1430A,2
White, David C. 2.3:1600A,5
White, J. F. 2.3:1800,51
White, J. L. 2.3:2800B,4
Whitehead, T. N. 2.3:1230A,6
Whiteley, A. L. 2.3:1100,7
Whitfield, I. C. 2.3:3400A,10
Whitmer, C. A. 2.3:2300,15
Wiberly, Stephen E. 2.3:3200A,3
Widl, E. 2.3:1730C,11
Wiedenbeck, M. L. 2.3:1600A,10
Wiener, Norbert 2.3:1300A,1
Wiens, Wilhelm C. W. O. 2.3:1000C,9
Wijn, H. P. J. 2.3:1550C,8
Wilkes, M. V. 2.3:1430A,2
Willard, H. H. 2.3:2100A,11
Willardson, Robert K. 2.3:1550A,8
Williams, Dudley 2.3:1900,3
Williams, Frederick C. 2.3:2300,20
Williams, Samuel B. 2.3:1430A,19
Williams, T. J. 2.3:3200A,13
Wilson, A. J. C. 2.3:2100B,9;
 2.3:2100C,10
Wilson, Frank W. 2.3:1000A,20
Winchell, Constance M. 2.6:G100,5
Winckel, Fritz 2.3:1630C,1
Wind, Moe 2.3:1500,16;2.3:1770A,11
Winkler, O. 2.3:3200C,9
Wiskocil, C. T. 2.3:3600,9
Wittke, Heinz 2.3:1900,8
Wolf, Emil 2.3:2100B,4;2.3:2100C,11
Wolf, Helmut 2.3:2100C,9
Wolf, K. A. 2.3:3600,3
Wolfendale, Eric 2.3:1550B,5
Wolff, H. 2.3:2200,10
Wolfhard, H. G. 2.3:2800B,6
Woodson, Herbert H. 2.3:1600A,5
Woodson, Wesly E. 2.3:1200A,18
Woodward, P. M. 2.3:1500,18;2.3:1730A,19
Woodward, R. H. 2.3:2300,4
Wooldridge, D. E. 2.3:1300A,12
Normall, A. 2.3:2300,45
Wosnik, J. 2.3:1700C,6
Wright, William D. 2.3:2100A,8
Wright, W. V. 2.3:2800A,14
Wu, C. S. 2.3:1900,3
Wunsch, G. 2.3:1700C,3
Yarnell, J. 2.3:1230B,4
Yarwood, J. 2.3:2500A,8;2.3:2500B,3
Young, Alwyn 2.3:1370A,6
Young, James F. 2.3:3600,6
Younger, John E. 2.3:2900A,10
Yovits, M. C. 2.3:1300A,5;2.3:1430A,7
Yuan, L. C. L. 2.3:1900,3

Zacherl, M. K. 2.3:3200C,1
Zarantonello, E. H. 2.3:3000A,8
Zeiss 2.9:P170,2;2.9:P830C,16
Zelbstein, Uri 2.3:1230C,7
Zel'dovich, Ya. B. 2.3:2300,S6
Zeluff, Vin 2.3:1300A,6
Zenneck, J. 2.3:1700C,3
Zentner, R. D. 2.3:2300,31
Zevin, L. S. 2.3:2300,S3
Zimmerman, H. J. 2.3:1530A,S;2.3:1570,7
Zimmerman, Oswald T. 2.7:I100,6
Zinke, Otto 2.3:1770C,4
Zopf, G. W. Jr. 2.3:1400A,10;2.3:
 1570,2
Zucrow, M. J. 2.3:1830A,13
Zuman, P. 2.3:3400D,3
Zwick, George 2.3:1530A,8
Zworykin, Vladimir J. 2.3:1670,13;
 2.3:1770A,3;2.3:2170,12

4. SUBJECT INDEX.

Subject entries are chiefly based only on titles; deeper penetration is provided for a few obscure titles. The subject classification has a different function and could not serve as a subject index; each supports the other. The index provides analytical capacity for disclosing topics concealed in the classification by overlap among classes, or by multiple interests in one entry.

Page numbers are not indicated; entries by class number and item number facilitate exact location of entries through their numerical sequence.

Cross references are of two conventional kinds:

See (for near identities), e.g. Lighting. See Illumination.

See also (broader to narrower terms, or vice versa), e.g. Navigation.
See also Avigation.

Since cross references cannot predict all the synonyms which will be sought, a guessing game goes on forever between indexers and searchers. Sometimes perversely called an effort by each to outguess the other, it is actually an inguessing game. Indexers seek to read in inquirers' minds the terms they will seek; searchers seek to read in indexers' minds their most probable choice among entries. Skill in this game can and should be cultivated on both sides. Practice and patience are commended to users of this index.

4. Subject Index (Cont.)

- Aberrations
 lenses 2.3:2100C,5
Absorptimetry 2.3:2130,5,6
Abstracting
 services 2.6:G300,6,7
Acceleration
 bibliographies 2.2:B100,20
Accelerators 2.9:P900A,8
 instrumentation 2.9:P900C,5
Acoustics 2.9:P870,1,5,7,9,10;
 2.9:P1200C,6
 conferences 2.3:2600,18
 electric 2.3:2600,22
 field theory 2.3:1900,6
 infrasonic 2.3:2600,9
 measurements 2.3:2600,14
 principles 2.3:2600,1,7,11
 underwater 2.3:2600,12
Acoustics. See also Electroacoustics,
 Hypersonics, Sound, Ultrasonics.
Aerodynamics 2.3:1800,7,17
 aircraft 2.3:1800,10
 bibliographies 2.2:B400C,7
 chronophotography 2.3:2200,7
 flame studies 2.3:2100B,7
 hypersonic 2.3:1800,1,15;
 2.3:3000A,10,11
 handbooks 2.3:2600,13
 measurements 2.3:1800,9
 missiles 2.3:1830A,15
Aerodynamics. See also Aircraft.
Aeronautics 2.9:P300A,3,7,9;2.9:P300B,1;
 2.9:P300C,3,7,5;2.9:P300D,1
 abstracts 2.1:A600,4,7,8,14
 bibliographies 2.1:A600,17;2.2:B400C,5
 design data 2.3:1800,16
 dynamics 2.3:3000B,2
 forecasting 2.3:2000,2
 hypersonics 2.3:1800,12
 indexes 2.1:A700,16
 missiles 2.9:P300C,5
 publications 2.9:P300A,13
Aeronautics. See also Navigation.
Aerospace 2.9:P300C,1,2,3;2.9:P300D,1;
 2.9:P530,4
 abstracts 2.1:A600,4,16
 catalogs 2.5:D100A,8
 electricity 2.3:1830A,19
 electronics 2.3:1830A,19
 engineering 2.9:P300A,2,8,9;2.9:P300B,
 2;2.9:P300D,2
- Aerospace (Cont.)
 information services 2.6:G100,7
 literature
 source lists 2.7:I200,4
 medicine 2.9:P300A,6
 research 2.9:P300B,3
 sciences 2.9:P300A,5,12;2.9:P300B,3
 technology 2.9:P300A,8;2.9:P300B,2
 telemetry 2.3:1830A,9
 vehicles 2.3:1830A,12
Aerospace. See also Astronautics,
 Space.
Aerotermodynamics 2.3:1800,3
Agriculture
 bibliographies 2.7:I200,3
Air
 pollution 2.3:3400A,2
 sampling devices 2.3:1270,18
 properties 2.3:2800C,3
 thermodynamic properties 2.3:3000A,1
Air. See also Atmosphere.
Air conditioning 2.9:P800,4
 automatic control 2.3:1370A,5
 bibliographies 2.2:B400C,1
 catalogs 2.5:D100A,4
 handbooks 2.3:1000A,19
Aircraft 2.3:1830A,13
 electrical systems
 handbooks 2.3:1800,8
 engineering 2.9:P300A,4
 high speeds 2.3:1800,7
 instrument flying 2.3:1800,13
Aircraft. See also Aerodynamics.
Alloys
 handbooks 2.3:1000B,2
Amplidyne
 control systems 2.3:1100,7
Amplifiers 2.3:1330C,9;2.3:1500,18;
 2.3:1530C,2,8,13;2.3:1550B,4;
 2.3:2400A,8
 applications 2.3:1560A,S1
 control systems 2.3:1100,7
 diode 2.3:1550A,2
 magnetic 2.3:1730A,7
 analysis 2.3:1630A,4
 circuitry 2.3:1630A,11
 nuclear counters 2.3:2400A,5
 radio 2.3:1700C,11
 transistor 2.3:1730B,3
Analysis
 chemical 2.3:3200A,10

4. Subject Index (Cont.)

Analysis (Cont.)

chemical

- x-rays 2.3:2300,43
- chromatographic 2.3:3200C,3
- colorimetric 2.3:3200A,11
- electrochemical 2.3:3200A,26
- instrumental 2.3:2100A,11;
2.3:3200A,3,7,8,18,20
- metals 2.3:3300,7

- micro 2.3:3200A,S2;2.3:3200C,1,6;
2.3:3300,11

- x-ray 2.3:2170,17
- photometric 2.3:3200A,11
- physical methods 2.3:3200A,S4
- qualitative 2.3:3200A,22
- spectrochemical 2.3:3200A,11;
x-ray 2.3:2130,4
- volumetric 2.3:3200B,3
- x-ray 2.3:3200C,S;2.9:P1330,6

Anatomy

- electron microscopy 2.3:2170,5

Animals

- cybernetics 2.3:1300A,1

- Antennas 2.3:1700C,11;2.3:1730C,15;
2.9:P530,4
- handbooks 2.3:1000A,18
- microwave 2.3:1730D,2;2.3:2300,12
- radio 2.3:1770C,5

Apparatus

- designs 2.9:P450C,6
- electron-medical 2.3:3400A,6

Argon

- thermodynamic properties 2.3:3000A,1

Armament

- missiles 2.3:1800,17

Asphalts

- testing 2.3:3600,5

Astronautics

- abstracts 2.1:A600,12,14
- advances 2.9:P300A,10
- bibliographies 2.2:B400C,5
- conferences 2.3:1800,5
- design data 2.3:1800,16
- dynamics 2.3:1800,17
- handbooks 2.3:1830A,5,6
- Soviet 2.3:1830D,2

- Astronautics. See also Aerospace,
Navigation, Space.

Astronomy

- bibliographies 2.2:B100,S3;2.2:B300,6
- information services 2.6:G100,7
- radio

 - meteorology 2.3:2000,5
 - tables 2.3:1000C,10

- Astrophysics 2.9:P830A,11;2.9:P1100A,2;
2.9:P1100C,5;2.9:P1600,8
- handbooks 2.3:1000C,4

Atmosphere

- research conferences 2.3:2000,5

- Atmosphere. See also Air

Atomic energy.

- piles 2.3:2400C,3

- power generation 2.9:P900C,8

- Atomic energy. See also Nuclear energy

Atoms

- physics 2.3:1900,3

- Automatic control 2.3:1200A,9;2.3:
1200C,7;2.3:1300A,7;2.3:2300,S4;
2.9:P100A,2;2.9:P100B,3,9;2.9:
P200,3;2.9:P250A,6;2.9:P250B,1;
2.9:P250C,2,3,6,8;2.9:P250D,1,2,
4,5;2.9:P530,4;2.9:P1300,5,9

- abstracts 2.1:A600,1

- air conditioning 2.3:1370A,5

- bibliographies 2.2:B200,2,3,4,9,11

- catalogs 2.5:D100A,2,14

- ceramics 2.9:P250C,4

- chemical processes 2.3:3200A,13

- circuits

- handbooks 2.3:1300A,6

- components 2.3:1300D,10

- computers 2.3:1300A,16

- conferences 2.3:1300A,13;2.3:1300D,6

- design 2.3:1300A,14

- digital devices 2.3:1430C,2

- discontinuous 2.3:1370A,13

- dynamics 2.3:1300D,4

- electronics 2.3:1300A,11;2.9:P600A,1

- feedback 2.3:1300A,4

- handbooks 2.3:1000C,1,5,8;2.3:1300A,
2,8;2.3:1300C,3,6,7,13

- industrial 2.3:1230C,5;2.3:1300C,9;

- 2.3:1370A,4

- measurements 2.9:P100C,1

- optimizing 2.3:1300A,10

- petroleum refining 2.3:3200A,13

- relays 2.3:1330D,3

- servomechanisms 2.3:1330A,4

4. Subject Index (Cont.)

Automatic control (Cont.)

statistical techniques 2.3:1700C,1
systems 2.3:1100,7;2.3:1300A,9,17;
2.3:1300B,1;2.3:1300D,8,9;2.3:
1330A,1,9,12,13;2.3:1330D,2;2.3:
1370A,12;2.3:1370B,1;2.3:1370C,4;
2.3:1400C,7
telemetric 2.3:1330C,5
theories 2.3:1300C,5;2.3:1300D,2,3;
2.3:1370D,1

Automatic control. See also Automation,
Controls, Process Control, Servo-
mechanisms.

Automation 2.1:A100,8;2.3:1400A,10;
2.9:P100A,2;2.9:P100B,3,9;2.9:P200,
4,13;2.9:P250A,2,7;2.9:P250B,3;
2.9:P250C,1,3,5,6,7,8,9;2.9:P250D,
3,4,5,6,7,8;2.9:P600C,4
abstracts 2.1:A200,3;2.9:P250A,5
amplifiers 2.3:1330D,1
bibliographies 2.2:B200,6,8,11
catalogs 2.5:D100C,4
components 2.3:1300D,1
conferences 2.3:1300A,5;2.3:1300D,7,8;
2.3:1370A,8;2.3:1570,2;2.5:D100A,18;
2.5:D100C,4;2.9:P250A,4
handbooks 2.3:1300A,12
human factors 2.3:1300C,4,S
instruments 2.9:P100B,3,9
machine tools 2.3:1330C,7;2.3:1370C,3
machines 2.3:1330C,3,6
punched cards 2.3:1400C,5
relays 2.3:1330C,8
servomechanisms 2.3:1300C,8
systems 2.3:1300D,11

Automation. See also Automatic Control,
Servomechanisms.

Autoradiography 2.3:3400A,13

Aviation. See Aircraft, Navigation.

Avigation 2.3:1800,S2

engineering 2.3:1800,2

Avigation. See also Navigation.

Balances 2.3:3200C,1
specifications 2.3:3700,2

Balancing
mechanics 2.3:3100,10

Band filters
circuitry 2.3:1730C,9

Barometers

bibliography 2.3:2500A,5

Barometry

handbooks 2.3:2500A,10

Beta rays 2.3:2300,36

counting 2.3:2300,S1

Beta rays. See also Radioactivity.

Bimetals

bibliography 2.2:B100,11

Bioastronautics

electronics 2.3:1830A,4

Biochemistry

polarography 2.3:3400D,3

Bioelectronics 2.3:3400A,5,8,10,15;

2.3:3400B,1,4;2.3:3400D,5

bibliographies 2.2:B400A,12

conferences 2.3:3400A,17

handbooks 2.3:3400A,14

Biology 2.9:P1600,8

abstracts 2.1:A100,1,3,13

bibliographies 2.2:B400D,3

laboratory technique 2.3:1100,3

microcalorimetry 2.3:2800C,7

temperature control 2.3:2800A,6

Biophysics 2.3:1200A,6

instrumentation 2.3:3400A,11

molecular 2.3:3400A,16

temperature control 2.3:2800A,12

Bitumens

testing 2.3:3600,5

Blood flow 2.3:3400A,4

Brinell

tests 2.3:3600,10

Broadcasting 2.9:P530,4

Cables 2.9:P770,8

Calibration 2.3:3500,11;2.9:P1500,5;

2.9:P1550,13

electric meters 2.3:1230C,13

standards 2.3:3500,4

Calorimetry 2.3:2800A,18

gas 2.3:2800B,1

micro 2.3:2800C,7

Capacitance

bridge 2.3:1230B,7

Capacitors 2.3:1500,14;2.3:1530B,8

discharges 2.3:1670,11;2.3:1730C,4

Carbon dioxide

thermodynamic properties 2.3:3000A,1

4. Subject Index (Cont.)

- Carbon monoxide
thermodynamic properties 2.3:3000A,1
- Cardiography
electric 2.3:3400A,20;2.3:3400C,2;
2.3:3400D,7
- Cartography 2.9:P1000D,6
- Cathodes
discharges 2.3:1530C,S
- Cathode rays 2.3:1530D,1;2.3:2300,22
devices 2.3:1530A,15
oscillography 2.3:1530C,9
- Cavities 2.3:3000A,8
- Ceramics
abstracts 2.1:A700,8,13,15
automation 2.9:P250C,4
handbooks 2.3:1000B,2
- Cermets
handbooks 2.3:1000B,2
- Chemical Analysis. See Analysis.
- Chemical industry
controls 2.3:3200C,9
physics 2.3:3200B,5
- Chemicals
organic
spectrometry 2.3:2130,16
- Chemistry 2.1:A100,11;2.9:P1150C,1;
2.9:P1200D,1,5;2.9:P1600,3
abstracts 2.1:A100,1;2.1:A500,2,4
analytical 2.3:1000C,5;2.3:1200C,7;
2.3:3200A,7;2.9:P1300,1,2,4,5,6,7,
8,9,10,12;2.9:P1300,12,13;2.9:
P1330,13
abstracts 2.1:A500,3
instrumentation 2.9:P1300,3
micro 2.9:P1330,1,10
nucleonics 2.9:P900A,9
apparatus
catalogs 2.5:D100C,5
bibliographies 2.2:B400D,3
cosmic 2.9:P1050,5
electro. See Electrochemistry.
handbooks 2.3:1000A,21,27
heats of reaction 2.3:2800A,16
indexes 2.6:G200,2;2.7:I200,1
industrial 2.9:P1370,2,3,4,5,7,9
instrumentation 2.1:A200,1;2.3:
3200A,15
literature guides 2.6:G200,5,6
machinery 2.3:3200A,9
micro 2.3:3200C,1
nomenclature 2.6:G200,2
- Chemistry (Cont.)
nuclear 2.3:1400A,3
physical 2.3:3200A,19,26;2.7:I200,5;
2.9:P1300,11;2.9:P1330,5,11;2.9:
P1370,8;2.9:P1600,8
reaction kinetics 2.3:2800B,4
solids 2.9:P1100B,4
tables 2.3:1000C,10
- Chemistry. See also Analysis, Electrochemistry, Geochemistry, Magnetochemistry, Photochemistry.
- Chromatography 2.3:3200A,6;2.3:3200C,5;
2.9:P1330,9
applications 2.3:3200C,3
electro 2.3:3200A,25
gas 2.3:3200A,1,2,21;2.3:3300,11
abstracts 2.1:A200,2,7
inorganic 2.3:3200C,1
ion exchange 2.3:3200A,25
techniques 2.3:3200B,2
- Chronometry 2.3:2300,20;2.9:P100C,8;
2.9:P130,1,3,7
clocks 2.3:2700,3,4
electronic 2.3:2700,1
handbooks 2.3:2700,4
- Chronometry. See also Time.
- Chronophotography
aerodynamic studies 2.3:2200,7
- Circuits
alternating current 2.3:1630A,5
analysis 2.3:1700B,1;2.3:1770A,8
electronic 2.3:1570,7
functional 2.3:1630A,12
printed
foil techniques 2.3:1570,4
switching 2.3:1630A,3
transient
analysis 2.3:1630A,9
- Clays
x-ray analysis 2.3:2100B,2
- Climatology 2.3:1900,9
- Clocks. See Chronometry.
- Coils
testing 2.3:1230C,10
- Color 2.3:2100A,13
measurements 2.3:2100A,8
- Colorimetry 2.3:2130,5;2.3:3300,11
instruments 2.3:3200A,11
- Combustion 2.3:1800,7;2.9:P800,2,3
conferences 2.3:3200B,1
flame studies 2.3:2100B,7

4. Subject Index (Cont.)

- Combustion (Cont.)
gases 2.3:2800B,5
- Communication 2.3:1300A,1
handbooks 2.3:1000A,24
systems 2.3:1700A,7
theories 2.3:1400A,2;2.3:1400B,5;
2.3:1700A,2;2.3:1770A,1
- Communication. See also Telecommunications.
- Components
electronic. See Electronics.
handbooks 2.3:2300,17
- Compressors 2.3:2900C,5
aerodynamics 2.3:1800,7
- Computers 2.3:1400C,S;2.9:P200,1,4,7,
10,12,13,16;2.9:P530,4
abstracts 2.1:A300,4,7,12,13
analog 2.3:1430A,1,4,6,8,10,12,18,20;
2.3:1430C,3,4,5,7,S;2.3:1430D,3;
2.3:1500,18
programming 2.3:1430C,6
applications 2.3:1400A,1,3,6,7,S3
bibliographies 2.1:A300,4;2.2:B200,
1,10;2.2:B400B,1
binary techniques 2.3:1400C,1
components 2.3:1300D,10;2.3:1400A,8
conferences 2.9:P200,11
control systems 2.3:1300A,16;
2.3:1330A,10
designs 2.3:1400A,4;2.9:P200,8
devices 2.3:1400D,2
digital 2.3:1430A,1,8,9,11,12,15,17,
19;2.3:1430B,2;2.3:1430C,1,3,7;
2.3:1430D,1;2.3:2400A,10;2.9:P200,2
circuits 2.3:1430A,13
components 2.3:1430A,14
designs 2.3:1430A,3,21
programming 2.3:1400C,3;2.3:1430A,
2,5,S;2.3:1430B,1
systems 2.3:1430A,16
- EEG analysis 2.3:3400A,7
- electronic 2.9:P200,16
- ETL Mark II 2.3:1430D,2
- handbooks 2.3:1000A,13;2.3:1000C,8;
2.3:1300A,12;2.3:1300C,13
- high-speed 2.3:1400B,2
- information systems 2.3:1400D,S
- laboratories 2.9:P200,15
- linkages 2.3:2300,28
- memories 2.3:1430A,7
- Computers (Cont.)
programming 2.3:1370C,5;2.3:1400A,S2;
2.3:1400C,4,10;2.3:1400D,1;
2.3:1430A,8
theories 2.3:1400C,2
- Computers. See also Data processing.
- Conductors
physics 2.3:1550C,7
theories 2.3:1550D,5
- Conferences. Look under the main topic.
- Connectors 2.3:1500,14
- Consultants 2.9:P1300,4
- Contacts
electrical 2.3:1600B,1
abstracts 2.1:A300,9
handbooks 2.3:1570,10
- Control systems 2.3:1370C,2;2.9:P100A,2
adaptive 2.3:1370A,2
computers 2.3:1330A,10
conferences 2.3:1300A,10,13;2.3:
1300D,6;2.9:P250A,3
designs 2.3:1300A,15
digital 2.3:1370A,11
direct current 2.3:1330A,14
electric 2.3:1330A,12
instruments 2.9:P100B,3
medical 2.3:1200A,6
nonlinear 2.3:1370A,1
sampled-data 2.3:1330A,2;2.3:1370A,11
stability 2.3:1370C,1
- Controls 2.3:1200C,7;2.3:1300A,1
electric power 2.3:1370C,6
electronics 2.3:1370A,9
engineering 2.9:P250A,1
feedback
bibliographies 2.2:B200,7
fluid power 2.3:3000A,12
handbooks 2.3:1200A,2,12,13;2.3:
1300A,12
hydraulics 2.3:1330C,2;2.3:3000C,1
instruments 2.3:1200A,7
periodicals 2.9:P100D,4
remote 2.3:1330C,S;2.3:1330D,2
stochastic 2.3:1330A,8
- Controls. See also Automatic control,
Process control, Quality control.
- Copper
in instruments 2.3:2800B,2
- Corrosion
abstracts 2.1:A600,2

4. Subject Index (Cont.)

- Cosmic rays
 bibliographies 2.2:B400D,2
- Counters
 Cerenkov 2.3:2400A,8
 nuclear
 amplifiers 2.3:2400A,5
 scintillation 2.3:1500,18
- Counters. See also Radioactivity.
- Cryogenics 2.9:P800,5,7,9,10
 engineering 2.3:2800A,9
- Cryoscopics 2.3:1670,S;2.3:2800C,8
 applications 2.3:2800C,1
 bibliographies 2.2:B400A,1,4
 experimental 2.3:2800B,7
 physics 2.3:2800A,15;2.9:P800,8
 superconductivity 2.3:2800A,8,11
- Crystallography 2.9:P830D,2
 handbooks 2.3:2100C,17
 optical 2.3:2100A,6
 structure studies 2.3:2100C,10
- Crystals
 electronics 2.3:1500,24
 ferroelectric 2.3:1730A,10
 luminescence 2.3:2100C,4
 optical uses 2.3:2100C,15
 oscillators 2.3:1730C,9
 piezoelectric 2.3:1730A,9;2.3:2600,3
 radio 2.3:1730C,12
 semiconductors 2.3:1560B,1
 single 2.3:1530B,3
 applications 2.3:1730C,17
 x-ray analysis 2.3:2100B,9;
 2.3:2100C,12
- Crystal structures
 minerals 2.3:2100B,2
- Cybernetics 2.3:1300A,1;2.3:1300C,S;
 2.9:P250C,2,10;2.9:P250D,5
- Data processing 2.3:1300C,1;2.3:1400A,
 11;2.3:1400B,1;2.3:1400C,S;2.3:
 1400D,S;2.9:P200,1,4;2.9:P250A,6;
 2.9:P250C,2
 abstracts 2.1:A300,2
 binary devices 2.3:1400C,1
 conferences 2.3:1300C,1;2.3:1400B,4
 electronics 2.3:1300C,11
 handbooks 2.3:1000C,8;2.3:1300A,12;
 2.3:1300C,13;2.3:1400C,6
 high-speed 2.3:1400A,12
- Data processing. See also Computers.
- Density
 controls 2.3:1300C,9
 measurements 2.3:3500,10
- Deterioration
 abstracts 2.1:A600,10
- Detonation
 rocket fuels 2.9:P300A,7
- Development
 industrial 2.9:P100B,6
- Diagnosis
 electrical 2.3:3400A,21
- Dielectrics 2.3:1670,12;2.9:P500,2,16
 abstracts 2.1:A300,8
 devices 2.3:1630A,2
- Dielectrics. See also Electricity.
- Diffraction
 electrons 2.3:2100C,13;2.3:2170,3,16
 bibliographies 2.2:B400A,8
 gratings 2.3:3500,3
 light 2.3:2100C,5
 x-rays 2.3:2170,10
 bibliographies 2.2:B400A,8
- Diodes 2.3:1560C,4;2.3:1560D,1;2.9:
 P700,18;2.9:P770,11
 theories 2.3:1560C,7
- Dispersions 2.3:1900A,S1
- Displacement
 bibliographies 2.2:B100,20
- Dissertations
 abstracts 2.4:D,1
 guides 2.1:D,2,3,4,5,6,7
- Distance
 measurements 2.3:2200,13
- Distribution
 countercurrent 2.3:3300,11
- Dosimetry 2.3:2300,30,33,37,38,42,46
 47,S4,S5;2.3:2400A,8;2.9:P830A,4
 neutrons 2.3:2400B,S
 photographic 2.3:2300,37
 radiation hazards 2.3:2300,30,33,
 46,47
- Dosimetry. See also Radiation.
- Duplexers 2.3:2300,14
- Dynamics
 analogies 2.3:2900A,2
 fluid 2.3:2900A,13
 gases 2.3:1800,7;2.3:2900A,11
 lattice 2.9:P1150A,3
 magnetogas 2.3:2900A,18
 of points 2.3:2900C,1
 plasma 2.3:2900A,18

4. Subject Index (Cont.)

Dynamics (Cont.)

quantum 2.3:2900C,2
theories 2.3:2900A,10

Dynamics. See also Mechanics.

Earth Sciences

information services 2.6:G100,7

Elasticity

2.3:2900A,17

theories 2.3:2900D,1

thin shells 2.3:2900D,3

Electric energy

conversion 2.3:1600A,4,5;2.9:P500,10;

2.9:P530,7

Electric meters

calibrating 2.3:1230C,13

handbooks 2.3:1630A,10

Electric networks

analysis 2.3:1670,4

Electric power

2.9:P500,6;2.9:P530,8

devices 2.3:1600C,S

Electric apparatus

testing 2.3:1500,19

Electrical circuits

transients 2.3:1670,3

Electrical machines

magnetic fields 2.3:1670,7

Electrical measurements

2.3:1530C,4;2.3:1600A,4;

2.3:1600A,10,11;2.3:1600C,9;

2.3:1600D;2.3:1670,8

a.c. 2.3:1670,1

a.c. and d.c. 2.3:2300,40

accuracy 2.3:1630C,3

analysis 2.3:1670,16

applications 2.3:1530A,10;2.3:1600A,9

devices 2.3:1630C,4,8;2.3:1670,6

low frequency 2.3:1770C,3

mechanical properties 2.3:1230C,14;

2.3:1270,3

precision 2.9:P500,18

rectifiers 2.3:1230C,12

Electrical noise

2.3:1700A,4;2.3:1770A,6

Electrical systems

vibrations 2.3:3100,4

Electric equipment

medical 2.3:3400D,8

Electricity

2.9:P450C,1,5;2.9:P500,5,15;

2.9:P530,1

abstracts 2.1:600,3;2.2:A300,3

applications 2.3:1500,8;2.9:P600C,11

atmospheric 2.9:P1000A,5

Electricity (Cont.)

atomic power 2.9:P900C,8

circuitries 2.3:1600A,2;2.3:1600C,4;

2.3:1630A,3,5,9

contacts 2.3:1600B,1

discharges 2.3:2400A,2

equipment design 2.9:P500,1,3

experimental 2.9:P500,7,9;2.9:P570,1

handbooks 2.3:1000A,12;2.3:1000C,4

industrial 2.9:P500,4,8,11,12,14;

2.9:P530,1,3,5,6,9,10,12,13,15;

2.9:P570,2,3,4,5,6,7,8,9,10;2.9:

P600C,11;2.9:P700,4,9

instruments 2.3:1230C,2

machines 2.3:1600C,1

relays 2.3:1630A,7

static

conferences 2.3:1600C,7

thermal 2.3:2800A,1

units 2.3:1600A,8;2.3:1600C,10

Electricity. See also Dielectrics,

Electrochemistry, Thermoelectricity

Electroacoustics

2.3:2600,22;2.9:P770,2

transducers 2.3:1730D,6

Electroacoustics. See also Acoustics.

Electrochemistry

2.9:P1370,1,6,10,11,12

analytical 2.1:A500,S;2.3:3200A,16;

2.9:P1330,2

instrumental 2.3:3200A,24,26

Electrochemistry. See also Electro-phoresis.

Electrodes

glass 2.3:1230C,8

micro 2.3:3400D,6

references 2.3:1630B,3

Electrodynamics

2.3:1500,24

quantum 2.3:2900C,2

Electroencephalography

2.9:P130,5

computer techniques 2.3:3400A,7

Electroluminescence

2.9:P600A,7

Electromagnetic radiation

2.3:1700A,3

6,9;2.9:P700,1

cavities 2.3:1730A,13

guided 2.3:1730A,6

interference

handbooks 2.3:1770A,5

measurements 2.3:2100C,6

propagation 2.3:1700C,9;2.3:1700D

Electromagnetic radiation. See also Radio.

Electromagnetism

2.3:1600C,4;2.9:P1150A

3

4. Subject Index (Cont.)

Electromagnetism (Cont.)

- fields 2.3:1670,15
- field theories 2.3:1900,6
- relays 2.3:1630C,5

Electromechanical

- systems 2.3:2900A,19

Electromyography

- 2.3:3400A,9

Electron beams

- conferences 2.3:1500,21
- design 2.3:1530A,21
- technology 2.3:2400A,7

Electron emission

- 2.3:1500,18

Electron microscopy

- 2.3:2100C,13;
- 2.3:2130,3;2.3:2170,1,2,3,4,5,6,12,
13,14,15,16,19,20;2.9:P830A,14;
2.9:P830D,3
- bibliographies 2.2:B100,8,21;
2.2:B300,1
- handbooks 2.3:2170,18
- metallographic 2.3:3300,4,S

Electron microscopy. See also

Microscopy.

Electron probe

- microanalysis 2.3:3200A,S2

Electronics

- 2.1:A100,8;2.3:1500,18;
2.9:P250B,1;2.9:P530,14;2.9:P600A,
7,12;2.9:P600C,2,3;2.9:P600D,3,4;
2.9:P700,6,8,17;2.9:P730,4
- abstracts 2.1:A300,6,14;2.9:P600A,3
- applications 2.3:1500,8,20;2.3:2400A,
2;2.9:P250C,5;2.9:P250D,5;2.9:P600C,
6,7,8,9,10,11;2.9:P530,2,11;2.9:
P700,13;2.9:P730,4

- automation 2.9:P600C,4

- aviation 2.3:1800,2

- bibliographies 2.2:B300,4,5;2.2:
B400A,3;2.2:B400B,2

- biological 2.3:3400B,1;2.9:P530,4

- chronophotography 2.3:2200,7

- circuitry 2.3:1530A,4,S;2.3:1530C,13;
2.3:1530D,2;2.3:1570,7

- catalogs 2.5:D100A,9,13,16;2.5:D100B,
5;2.9:P600A,11

- conferences 2.3:1730C,3

- control devices 2.3:1300,6,11;2.9:
P600A,1;2.9:P600C,4

- correlation 2.3:1570,5

- data processing 2.3:1300C,11

- design 2.9:P500,1;2.9:P600A,9;
2.9:P600D,3

Electronics (Cont.)

- devices 2.3:1500,15,24;2.3:1530A,6,11
13,16;2.3:1530B,9;2.3:1530C,10,12;
2.3:1570,3;2.9:P570,10;2.9:P600C,5;
2.9:P600D,5

- noise 2.3:1530A,7

- directories 2.5:D100A,10

- encyclopedias 2.3:1000A,22;2.3:1500,
25

- engineering 2.9:P530,2

- handbooks 2.3:1000A,15,24;2.3:1000C,
2.3:1500,5,10,11,14;2.9:P600A,1,11

- industrial 2.3:1500,2,7,9,10,12,13,
22;2.3:1530A,17;2.9:P530,4,11;2.9:
P600A,5;2.9:P600B,1,2;2.9:P600D,1,L

- information services 2.6:G100,7

- instrumental 2.3:1500,12,16,17;2.3:
1530A,14,22;2.3:1770C,3;2.9:
P100B,3,9

literature

- source lists 2.7:I200,4

- medical 2.3:3400A,5,8,10,15,17;
2.3:3400B,4;2.3:3400D,5;2.9:
P130,10;2.9:P530,4

- bibliographies 2.2:B100,2

- handbooks 2.3:3400A,14

- military 2.9:P530,4

- miniaturization 2.3:1550A,9;2.3:
1550B,8;2.3:1570,S;2.9:P700,16,
17,18

nuclear

- symposiums 2.3:2400C,1

- packaging 2.3:1530B,2

- physics 2.3:1700B,2;2.3:1900,3

- principles 2.3:1500,3,23

- production 2.3:1530B,4;2.9:P600B,2

- quantum theories 2.3:1500,6;2.3:
1550D,5

- radio 2.9:P250,5

- radiodosimetry 2.3:1530D,S4

- reliability 2.3:1500,4,20;2.3:1530A,
5;2.9:P600A,2,13

- reviews 2.9:P600A,7

- solid state 2.3:1550C,1;2.9:P600A,8

- space vehicles 2.3:1800,17

- spectroscopic 2.3:1570,6

- transistors 2.3:1550A,7;2.3:1560A,
8,18

Electronics. See also Bioelectronics, Electron microscopy.

4. Subject Index (Cont.)

Electrons

emission 2.2:B100,19
impacts 2.3:1570,1

Electrophoresis 2.3:3200A,S1
applications 2.3:3200B,4
bibliographies 2.2:B400A,11
principles 2.3:3200C,4
techniques 2.3:3200B,2

Electrophoresis. See also Electro-
chemistry.

Electrostatics

conferences 2.3:1600C,7

Elements

handbooks 2.3:1000B,2

Emission

photoelectric 2.3:1670,2

Encephalography

electrical 2.3:B400D,2

Energy. See Solar energy.

Engineering 2.1:A100,11;2.9:P1200C,2,
3,4;2.9:P1200D,1,2,5;2.9:P1600,3

abstracts 2.1:A600,4,6,9,11,13;
2.8:Pa300,5

astronautical

handbooks 2.3:1830A,5

automotive 2.9:P1200A,1

bibliographies 2.2:B400B,1;2.2:B400C,
3,4,6;2.2:B400D,3;2.7:I100,7

catalogs 2.5:D100A,3,12;2.5:D100B,4

chemical 2.8:Pa300,5;2.9:P1200C,6;
2.9:P1370,3,4,7

abstracts 2.1:A700,11

handbooks 2.3:1000A,1

civil 2.9:P1200B,2;2.9:P1200C,10

cryogenic 2.9:P800,5

electrical 2.1:A100,3;2.3:1600C,3,5;
2.9:P530,1,2;2.9:P570,5,6,7;2.9:
P700,9;2.9:P730,17;2.9:P1200B,2
abstracts 2.1:A100,9

electronic 2.3:1500,13

handbooks 2.3:1000A,4,7,9,11,20,24,
26,28,29;2.3:1000C,2;2.3:1700C,8

hazards 2.9:P1200A,5

human 2.3:1200A,18

illuminating 2.9:P830A,3

indexes 2.7:I100,11

industrial 2.9:P1200B,3

instruments 2.3:1200A,16

literature guides 2.6:G100,7;2.6:
G200,1,3,4,7

mathematics 2.3:2900A,9;2.6:G200,3

Engineering (Cont.)

measurements 2.3:1230A,5

mechanical 2.1:A100,3;2.3:1200A,4;
2.3:2900A,12;2.9:P1200B,1,2;2.9:
P1200D,4

mining 2.9:P1200A,4

nuclear 2.3:1000A,22;2.9:P900A,10;
2.9:P900B,1

photographic 2.9:P830A,2,12

physics 2.3:1900,4

power 2.9:P1200A,8

production 2.9:P1200A,3;2.9:P1200C,
1,5

refrigerating 2.9:P1200A,11

research 2.9:P1200C,8

Soviet literature 2.9:P1200C,12

systems

design 2.3:1300A,3

technology 2.9:P1200B,3

testing materials 2.9:P1400,7,8

Engines

jet 2.3:1800,7

propulsion 2.3:1830A,13

Equipment

design 2.3:1200A,18

Esophagoscopy

2.9:P130,9

Experiments

design 2.3:1100,1,5,6,10

Explosion

gases 2.3:2800B,5

Fatigue

bibliographies 2.2:B100,S2

Feedback

2.3:1300A,4,14;2.3:1330A,1,9

Ferrites

2.3:1550C,8

crystals 2.3:1730A,10

high frequencies 2.3:1730C,5

microwaves 2.3:1730A,4,18,21;

2.3:1770D,1,4

theories 2.3:1730A,2

Ferrites. See also Semiconductors.

Ferromagnetism

2.3:1600A,7;2.3:1600C,2

measurements 2.3:1600C,6

Field emission

Soviet research 2.2:B100,19

Field theories

handbooks 2.3:1900,6

Films

optical properties 2.3:2100A,5

thin 2.3:1900,10;2.9:P1100B,5

physics 2.3:2500C,6;2.3:2900A,20

4. Subject Index (Cont.)

Filters

electronic 2.3:1330C,9; 2.3:1730C,9
Flames 2.3:2800B,5; 2.9:P800,2
optics 2.3:2100B,7
temperature 2.3:2800B,6

Flight

orbital 2.3:P1800,S4
powered 2.3:1800,S1

Flight tests

instrumentation 2.3:1800,4

Flow. See also Fluid flow.

Flow 2.3:2900A,17

hypersonic 2.3:1800,14; 2.3:3000B,1;
2.9:P300A,7
in ducts 2.3:3000A,15
instruments 2.3:1200A,9
laminar 2.3:3000D,3
measurements 2.3:3000A,7,S;
2.3:3500,10
solids 2.3:2900A,21

Flowmeters

computation
handbooks 2.3:3000A,2
engineering 2.3:3000A,13
orifice 2.3:3000A,7

Fluid flow. See also Flow.

Fluid flow 2.3:1800,7; 2.3:2900A,13;
2.3:2900C,8,17; 2.3:3000A,5,6,8,
9,14,17,18; 2.3:3000B,2; 2.3:
3000C,4
blood 2.3:3400A,4
hypersonic 2.3:3000A,16; 2.3:3000D,1
thermodynamics 2.3:1830A,13

Fluids

mechanics 2.3:2900A,16

Fluorescence 2.3:2100A,14

Foil techniques

printed circuits 2.3:1570,4

Food additives

analysis 2.3:3200A,20

Fracture

solids 2.3:2900A,17,21

Frequencies

high 2.3:1600A,6; 2.3:1700C,2,3,8; 2.3:
1730C,5; 2.3:1730D,4; 2.3:1770A,4;
2.3:1770C,4; 2.3:1770D,1
low 2.3:1770C,8
measurement 2.3:1770C,3; 2.9:P770,4
microwave 2.3:1770D,4
radio 2.3:1530C,11; 2.3:1770A,5;
2.9:P770,10

Frequencies (Cont.)

responses 2.3:1770A,7

Frequency modulation 2.3:1500,18

Fuels

abstracts 2.1:A700,5,10
gaseous 2.3:2800B,1
rocket 2.9:P800,6

Fuses 2.3:1500,14

Gages 2.9:P1400,14

Galvanometers

mirrors 2.3:1630C,7

Gamma rays 2.3:2300,36,S2; 2.3:2400C,4
spectrometry 2.3:2300,34

Gases

abstracts 2.1:A700,5
combustion 2.3:2800B,5
dynamics 2.3:3000C,2
flow 2.3:3000A,5,9
ionization

conferences 2.3:2400C,2

rarified 2.3:3000A,3; 2.9:P1450A,3

Gastroscopy 2.9:P130,9

Gearing

industrial 2.3:2900B,2

Gears

handbooks 2.3:1000A,8

Geochemistry 2.9:P1050,5

Geodesy

instruments 2.3:1270,8

Geodetics 2.3:1900,8; 2.9:P1000D,3,6

Geology 2.9:P1050,3,18

Geophysics 2.9:P1000A,1,2,3,4,5; 2.9:

P1000B,1; 2.9:P1000C,1,2,3,4,5,6,7,8;
2.9:P1000D,1,2,3,4,5,7,9,10; 2.9:

P1050,16; 2.9:P1600,5

abstracts 2.1:A100,1; 2.1:A1400,5,6

applications 2.3:1900,11; 2.3:2000,3,4;

2.9:P1000C,9; 2.9:P1050,14

bibliographies 2.2:B1400A,9

handbooks 2.3:1000A,14; 2.3:1000C,4;

2.3:1900,5

tables 2.3:1000C,10

Germanium

rectifiers 2.3:1630C,6

Glass

optical 2.3:1200C,1

Glassblowing 2.3:1100,9

Government publications

guides 2.6:G100,13

4. Subject Index (Cont.)

- Government publications (Cont.)
lists 2.7:I300,9
technical reports 2.7:I300,5
- Gravitation
fields 2.3:1900,6
- Guidance
inertial 2.3:1270,2; 2.3:1800,11,S2;
2.3:1830A,8a,10,21; 2.3:1830C
missiles 2.9:P300A,7
physics 2.3:1830A,4
- Gyroscopes 2.9:P170,9; 2.9:P1150A,5
applications 2.3:1230A,4; 2.3:2900A,6;
2.3:2900B,3,4; 2.3:2900C,14
- Hardness
testing 2.3:1270,4; 2.3:3300,5,10;
2.3:3600,10
- Health
radiation hazards 2.3:2300,30
- Health physics
instruments 2.3:3400A,1
- Heat 2.3:2800A,2,7,16; 2.9:P1200C,6
solar 2.3:2800C,5
technology
bibliographies 2.2:B400C,1
transfer 2.3:1800,7; 2.3:2800A,13; 2.3:
2800C,6; 2.9:P800,1; 2.9:P1200A,8
- Heat. See also Calorimetry.
- Heating
automatic control 2.3:1370A,5
catalogs 2.5:D100A,4
electric 2.9:P530,7
handbooks 2.3:1000A,19; 2.3:1000C,S2
industrial 2.9:P800,2,4
- Highway research
abstracts 2.1:A700,2
- Horology. See Chronometry
- Humidity
controls 2.3:1300C,9
measurements 2.3:3500,10
- Hydraulics 2.3:2900C,9; 2.3:3000A,6;
2.3:3000B,2
abstracts 2.1:A600,1
controls 2.3:3000A,12; 2.3:3000C,1
measurements 2.3:3000B,3; 2.3:3000D,2
- Hydrodynamics 2.3:2300,S6
bibliographies 2.2:B400C,7
instability 2.3:2900A,5
- Hydrogen
thermodynamic properties 2.3:3000A,1
- Hydrographics
handbooks 2.3:2000,1
- Hydrometry 2.3:3000D,2
- Hygiene
industrial 2.3:1270,18
- Hypersonics 2.3:1800,12; 2.3:3000A,11,
16; 2.3:3000D,1
conferences 2.3:3000A,10; 2.3:3000B,1
- Hypersonics. See also Ultrasonics.
- Illumination 2.9:P830A,3; 2.9:P830B,4;
2.9:P830C,1,11
electrical 2.9:P500,5; 2.9:P530,7;
2.9:P600C,5
handbooks 2.3:2100A,12
- Images
optical 2.3:2100C,5
- Impact
electronic 2.3:1570,1
ionic 2.3:1570,1
- Impulse techniques 2.3:1670,11
- Indexing
services 2.6:G300,6,7
- Inductance
bridges 2.3:1230B,7
- Information retrieval
mechanized 2.3:1400A,S1
- Information services 2.6:G100,4,12
science 2.6:G100,7
- Information theory 2.3:1300C,13; 2.3:
1400A,2,13; 2.3:1400B,5; 2.3:1400C,
7,8; 2.3:1500,18; 2.3:1700C,1;
2.3:1730A,19; 2.9:P200,3
applications 2.3:1300C,10
symposium 2.3:1400A,9
- Infrared
bibliographies 2.2:B100,4
instruments 2.3:2100C,6; 2.3:2130,8,
9,12,18; 2.3:3400A,2
methods 2.3:1770A,2; 2.3:2100A,9,10
physics 2.3:2800A,4; 2.9:P830A,13
- Infrared. See also Light.
- Infrasonics
spectrum 2.3:2600,9
- Instrumentation 2.1:A100,4,8; 2.3:1200A,
S; 2.3:1230A,16; 2.3:1500,18; 2.9:
P100A,2,6; 2.9:P1150B,2; 2.9:P1600,3
abstracts 2.1:A200,4,9; 2.1:A400,4,9;
2.1:A600,13; 2.1:A700,7,11
air sampling 2.3:1270,18

4. Subject Index (Cont.)

analytical 2.3:1200A,9;2.3:2100A,11;
2.3:3200A,7,11,18,26;2.3:3200B,5;
2.3:3200C,1;2.9:P1330,13,14
bibliographies 2.2:B400B,1
biophysics 2.3:3400A,11
catalogs 2.5:D100C,2
chemical 2.1:A200,1;2.3:3200A,12
circuits 2.3:1530A,4
combustion 2.3:3200B,1
conferences 2.3:1200A,11;2.3:1200C,
4,7;2.5:D100A,18
control systems 2.3:1270,1
copper 2.3:2800B,2
electronic 2.3:1500,17;2.3:1530A,14;
2.9:P530,4
encyclopedias 2.3:1200B,5
engineering 2.3:1270,19
flight tests 2.3:1800,4
geodetic 2.3:1270,8
handbooks 2.3:1200A,2,12,16;2.3:
1200B,3;2.3:1300A,8
industrial 2.3:1200A,1,15,17;2.9:
P170,5,7,8,10;2.9:P250B,3
magnetic tapes 2.3:1230A,2;2.3:1630A,6
marine sciences 2.3:1270,17,20
medical 2.3:1200A,6;2.3:3400A,1,2,3;
2.3:3400D,1
nuclear 2.3:1000C,4;2.3:1200C,7;
2.3:2400A,6,8;2.3:2400B,2,3;
2.9:P900C,5
periodicals 2.9:P100D,4
photographic 2.3:2200,6;2.9:P100A,3
polarography 2.3:3200A,23
power plants 2.3:1270,6;2.9:P130,4
process controls 2.3:1230A,9;
2.3:1370A,3
psychology 2.3:3400A,19
pulp and paper 2.3:1270,5
standards 2.3:1200A,5;2.3:3700,S

Instruments

applications 2.9:P100B,3,9;2.9:
P100C,2,3,6;2.9:P100D,1
calibration 2.3:3500,4
handbooks 2.3:3500,9
catalogs 2.5:D100A,2,6,7;2.5:D100B,2,
3;2.5:D100C,6
circuitry 2.3:1530A,22
components 2.3:1230A,15;2.3:2900C,11,
13
controls 2.3:1200A,7
design 2.3:1200B,2;2.3:1230A,6;2.3:
1230B,5;2.9:P100A,4;2.9:P100D,3

Instruments (Cont.)

electrical 2.3:1230A,1;2.3:1230B,1,2;
2.3:1230C,2;2.3:1500,14;2.3:1600C,
10
electrochemical 2.3:3200A,24
electronic 2.3:1230A,12,13;2.3:1230B,
6;2.3:2300,21;2.3:3700,5;2.9:P170,
11
gyroscopic 2.3:1230A,4;2.9:P170,9
laboratory 2.3:1200A,14;2.3:1230A,14;
2.9:P100C,7;2.9:P170,3,6
measurements 2.3:1200A,7;2.3:1230D,1;
2.3:1400C,9;2.3:1530C,11
mechanisms 2.3:2900A,3
meteorological 2.3:2000,6
metrology 2.3:1200C,3;2.3:1230C,15;
2.3:1270,12
military systems 2.9:P130,8
optical 2.1:A100,8;2.3:2100B,5;2.3:
2100C,5,15;2.3:2400A,2;2.9:P170,2;
2.9:P830C,14,16
photoindicating 2.3:1630C,7
precision 2.9:P100C,5,9,10;2.9:P100B,
14;2.9:P170,4;2.9:P450C,6,7;2.9:
P450D,10
radiation
catalogs 2.5:D100A,15
radio 2.9:P170,1
recording 2.3:1230C,9,16
reliability 2.1:A100,11,2.3:1200A,10
scientific 2.9:P100A,5;2.9:P100B,1
servicing
handbooks 2.3:1200A,8
specifications 2.3:3700,2
surveying 2.3:1270,9
technology 2.9:P100B,4,5,7;2.9:P170,
7;2.9:P100D,2;2.9:P250C,9
torsion devices 2.3:1230B,3
wind tunnel 2.3:2600,13

Interference

frequency 2.9:P530,4

Interferometers

2.3:2100B,8

Intermetallics

handbooks 2.3:1000B,2

Ionization

conferences 2.3:2400C,2

counters 2.3:2400A,2

detectors 2.3:2400A,8

gaseous

conferences 2.3:2400C,2

4. Subject Index (Cont.)

Ionometry

geoprospecting 2.3:2000,4

Ionosphere

2.9:P730,11

bibliographies 2.2:B300,10;

2.2:B400A,7

Ions

emission 2.2:B100,19

impacts 2.3:1570,1

Irradiation

nuclear 2.3:2400D

Isotopes

2.3:2130,13;2.3:2300,45;

2.9:P900C,15

Jet propulsion

2.3:1800,7;2.9:P300A,14

bibliographies 2.2:B400A,2

Jets

2.3:3000A,8

Jet streams

2.3:2100A,1

Klystrons

2.3:1530B,1;2.3:1530C,8;

2.3:2300,7

Laboratories

industrial 2.9:P100A,7

techniques 2.3:1100,9;2.9:P100A,1;

2.9:P100B,2;2.9:P100C,7

Laplace transforms

2.3:1500,18

Lasers

2.3:1730A,15;2.3:2100A,4,S2

Layers

boundary 2.3:1800,14

Length

measurements 2.3:3500,1

Lens

2.3:1200B,4

Level

instruments 2.3:1200A,9

Light

bibliographies 2.2:B100,4

calculations 2.3:2100C,1

generation 2.3:2100A,4

images 2.3:2100C,5

infrared 2.3:1770A,2;2.3:2100A,3,9,

10;2.3:2800A,4

instruments 2.3:3400A,2

measurements 2.3:2100B,3

Light.

See also Infrared, Photo-, Ultraviolet.

Lighting.

See Illumination.

Limnology

2.9:P1050,13

Liquid level

measurements 2.3:3500,10

Logic

engineering 2.3:1430A,8;2.3:1500,18

Loran

2.3:2300,4

Luminescence

crystals 2.3:2100C,4

Luminescence. See also Electroluminescence, Fluorescence.

Machine tools

2.9:P450D,3

conferences 2.9:P250A,3

control 2.3:1370C,3

handbooks 2.3:1000A,20

standards 2.3:3300,8

Machine translation

2.2:B200,5;2.3:

1400A,5;2.3:1400B,3;2.3:1400C,5

Machinery

chemical 2.3:3200A,9

Machines

2.9:P1200A,7

abstracts 2.1:A600,3

automation 2.3:1300C,4

catalogs 2.5:D100C,1,7

cybernetics 2.3:1300A,1

design 2.2:B200,8;2.3:1270,16;2.3:

2900C,16;2.9:P450C,6

dynamic analysis 2.3:2900A,8

electrical 2.3:1600C,1,9;2.3:1670,7

handbooks 2.3:1000A,2;2.3:1000C,7

testing 2.3:2900C,19

Magnavolt

control systems 2.3:1100,7

Magnetic fields

2.3:1500,24;2.3:2400A,2

Magnetic materials

applications 2.3:1600A,6

Magnetic resonance

2.3:1600A,1;2.3:

3200C,10

Magnetic tape

2.3:1630A,6;2.3:1630B,1

Magnetism

2.3:1500,S;2.3:1600A,8,S;

2.3:1630A,2;2.3:1630C,1;2.3:

1900,3

bibliographies 2.2:B400A,5

handbooks 2.3:1000C,4

terrestrial 2.9:P1000A,5

Magnetism.

See also Electromagnetism,

Ferromagnetism.

Magnetochemistry

2.3:3200A,17

Magnetohydrodynamics

2.2:B400A,10;

2.3:2900A,11;2.3:2900C,17

Magnetrons

2.3:1530C,8;2.3:2300,6

4. Subject Index (Cont.)

- Magnicon
control systems 2.3:1100,7
- Man
and machines 2.3:1300C,4
- Manipulation
physicochemical 2.3:3200A,19
- Manometers
bibliographies 2.3:2500A,5
- Manufacturers
catalogs 2.5:D100A,1,11;2.5:D100B,1;
2.5:D100C,2
- Mapping
electronic 2.3:1570,8
- Maps 2.9:P1000D,6
- Marine gearing 2.3:2900B,2
- Masers 2.3:1730A,1,15,17;2.3:1730B,1;
2.3:2100A,S2
bibliographies 2.2:B100,S1
- Mass transfer 2.9:P800,1
- Materials
deterioration 2.1:A600,10
handbooks 2.3:3600,6
magnetic properties 2.3:1500,S;
2.3:1600A,S
mechanics 2.3:2900A,14
properties
tables 2.3:1000C,3
standards 2.9:P1400,4
structural 2.2:B400A,1
testing 2.3:1270,4;2.3:1300C,2;2.3:
2900A,7;2.3:3600,2a,8,9,12,13,16
trade names 2.7:I100,6
- Materials. See also Testing materials.
- Mathematics 2.9:P400,6,11;2.9:P1200D,1,
5;2.9:P1600,3,7
abstracts 2.1:A100,1,7,10
analytical 2.9:P400,8
applied 2.3:2900A,5,13;2.9:P400,1,2,4,
5,7,9;2.9:P450B,1;2.9:P1150C,6;
2.9:P1200C,6
bibliographies 2.2:B400A,9;2.2:B400D,4
computation 2.9:P400,10
handbooks 2.3:1000C,4
in industry 2.9:P200,13
in instrumentation 2.3:1200A,16
information services 2.6:G100,7
literature guides 2.6:G200,4
- Matter
structure 2.3:2100C,10;2.9:P830A,14
structure studies 2.3:2100C,13
- Measurements 2.3:1200A,4,16;2.3:3500,
5,12;2.9:P250,2;2.9:P1400,3
acoustic 2.3:2600,14
aerodynamic 2.3:1800,9
conferences 2.3:1200C,4,7
distance 2.3:1200C,5
electrical 2.3:1200C,7;2.3:1230B,1,2;
2.3:1230C,6,11,12,14;2.3:1270,3,14;
2.3:1530A,10;2.3:1600A,9,10,11;2.3:
1600C,9;2.3:1600D;2.3:1630C,3,4,5,
8;2.3:1670,1,8,16;2.3:2300,40;2.9:
P500,18
electronic 2.3:1500,12,16;2.3:1530A,2
handbooks 2.3:1000C,5;2.3:1200A,13;
2.3:1300C,6;2.3:1500,16;2.3:3500,1
high frequencies 2.3:1770C,4
high temperatures 2.3:2800A,3
hydraulic 2.3:3000D,2
industrial 2.9:P100C,1,6
instruments 2.3:1200A,7
magnetic 2.3:1200C,7
mechanical 2.3:1200A,3;2.3:3500,6
microwave 2.3:1700A,5
particle size 2.3:3200C,8
physical 2.3:3200A,S4
physicochemical 2.3:3200A,19
piezoelectric 2.3:1270,15;2.3:1670,17
precision 2.3:1200B,1;2.3:3500,11
radio 2.3:1700C,4,5;2.3:1730D,4
remote reading 2.3:1330C,S
- Mechanics 2.1:A100,8;2.3:2900D,2;
2.3:3300,3;2.9:P400,2,11;2.9:P450A,
1,2,3,4;2.9:P450C,1,3,4,5,7,8;
2.9:P450D,5,7;2.9:P1200C,6;2.9:
P1400,10
actuating devices 2.3:2700,3
applied 2.3:2900A,4,14;2.3:2900C,5;
2.3:2900D,4;2.9:P400,2,4;2.9:
P450B,1;2.9:P450C,2,8;2.9:P450D,
2,4,8,9;2.9:P1200A,8;2.9:P1200D,1
reviews 2.1:A200,6
bibliographies 2.2:B400D,4
celestial 2.3:1800,17
fluids 2.3:2900A,16;2.3:2900C,8,17,S;
2.3:3000A,14;2.9:P450B,2
gyroscopic 2.3:2900B,4
high speed 2.9:P450D,6
industrial 2.9:P450C2
nonlinear 2.3:2900C,18
precision 2.3:2900C,11,13;2.9:P100B,
4a;2.9:P100C,10;2.9:P450D,8;2.9:
P1400,14

4. Subject Index (Cont.)

Mechanics (Cont.)

quantum 2.3:2900C,3
statistical 2.3:2900B,5
theories 2.3:2900C,7,15
vibration 2.3:3100,4

Mechanisms 2.3:1230A,6;2.3:2900A,1,3,8,
15;2.3:2900C,4,12

Mechanization 2.9:P250D,8

Medicine

abstracts 2.1:A100,2,3
bibliographies 2.2:B1400D,3
information services 2.6:G100,7
instrumentation 2.3:1100,3;2.3:3400C,
1;2.3:3400D,1,3,6,8
physics 2.3:3400A,3
temperature control 2.3:2800A,6
ultrasonics 2.3:3400B,2

Metadyne

control systems 2.3:1100,7

Metallography 2.3:3300,1,2,3;2.9:
P1200C,7

Metallurgy 2.1:A100,11;2.3:3300,9

Metals 2.3:2800A,8;2.3:3300,2,3,4,7,12;
2.3:3600,S;2.9:P1200A,4
abstracts 2.1:A700,3,4,7
electron microscopy 2.3:2170,14
handbooks 2.3:1000A,11,23
photoemission 2.3:2100C,2
superconducting 2.3:2800A,11,14
testing 2.3:3300,6,10;2.3:3600,2a;
2.3:3700,1

vacuum apparatus 2.3:2500C,9

Meteorology 2.3:1000A,5;2.3:2100A,1;
2.3:3000B,2;2.3:3400A,2;2.9:P1000C,
4;2.9:P1000D,5;2.9:P1050,2,3,9,10,
11,15,16,17,19

abstracts 2.1:A100,4

bibliographies 2.2:B1400D,1,5

handbooks 2.3:2000,8

instruments 2.3:1270,12;2.3:2000,6;
2.3:2100A,2

satellites 2.3:2000,5,9

weather forecasting 2.3:2000,2

Metrology 2.1:A100,8;2.3:3500,3,13;
2.9:P100C,6;2.9:P1400,3,14;2.9:
P1500,1,2,3,8,9,10,11,12;2.9:
P1550,13

catalogs 2.5:D100C,3,4

engineering 2.3:1230C,15;2.3:3500,14

handbooks 2.3:3500,15

instruments 2.3:1200C,2,3

Microbalance

vacuum 2.3:2500A,6

Microfilms

2.4:D,1

Micromeritics

2.3:2900B,1

Microscopy

2.9:P830A,6;2.9:P830B,3;

2.9:P830C,4,5,8,9

analytical 2.3:3200C,6

chemical

handbooks 2.3:3200A,22

encyclopedias 2.3:2170,9

techniques 2.3:2170,8,11,21;

2.3:2200,3

x-ray 2.3:2170,7,17

Microscopy. See also Electron microscopy.

Microwaves 2.3:1500,18;2.3:1770D,S;

2.9:P530,4;2.9:P700,14;2.9:P770,1,

7,11

antennas 2.3:1730D,2

applications 2.3:1700A,8,11

circuitry 2.3:1700A,10;2.3:1700B,1;
2.3:2300,9

crossed-field

components 2.3:1730A,16

ferrites 2.3:1730A,4,18,21;2.3:
1770D,1,4

handbooks 2.5:D100A,17

lenses 2.3:1730B,4

measurements 2.3:1700A,5;2.3:1770A,9;
2.3:1770C,7

handbooks 2.3:1000A,S;2.3:1770A,11

physics 2.3:1700B,2

solid-state 2.3:1770A,S

spectroscopy 2.3:1770B;2.3:1770C,1;
2.3:2130,1,9

theories 2.3:1700A,1;2.3:1730A,11

triodes 2.3:1730D,5

tubes 2.3:1700C,6;2.3:1730A,5;
2.3:1730C,2

Military systems

design 2.9:P130,8

Mineralogical Society

2.3:2100B,2

Minerals

x-ray analysis 2.3:2100B,2

Miniaturization

2.3:1570,S;2.9:P600A,13

Mining engineering

2.3:P1200A,4

Missiles

2.3:1830A,4,13,17,20;2.9:

P300A,1;2.9:P300C,5

aerodynamics 2.3:1830A,15

bibliographies 2.2:B100,12

catalogs 2.5:D100A,5

4. Subject Index (Cont.)

Missiles (Cont.)

guidance 2.3:1800,17; 2.3:1830A, 2, 7, 18

handbooks 2.3:1800,17

range testing 2.3:1800,17

Missiles. See also Rockets.

Moire fringes

metrology 2.3:3500,3

Molecules

physics 2.3:1900,3; 2.3:2130,8;

2.3:3200C,10

structure 2.3:2170,10; 2.3:2600,17

Moon

exploration 2.9:P300A,7

Motion pictures 2.3:2200,10

Motors 2.3:1330A,3,6; 2.3:1370A,10; 2.3:2900C,7

Muscles. See Myography.

Myography

electric 2.3:3400A,9,21; 2.3:3400B,3

National conferences

applied mechanics 2.3:2900A,4; 2.3:2900D,4

bioelectronics 2.3:3400D,5

communication satellites 2.3:1730B,2; 2.3:1830B,2

computers 2.3:1400A,3; 2.3:1430A,7

control systems 2.3:1300D,3

cryogenics 2.9:P800,5

electromagnetic radiation 2.3:1700A,6

electronics 2.3:1500,6,21; 2.3:1530B,2; 2.9:P600A,2,12

exhibits 2.5:D100A,18

food analysis 2.3:3200A,20

fluid dynamics 2.3:2900A,11,13

frequency responses 2.3:1770A,7

high pressures 2.3:2500A,2

high-speed testing 2.3:3600,11

high temperatures 2.3:2800A,17

hydrodynamics 2.3:2900A,5

hypersonics 2.3:1800,12; 2.3:3000A,10; 2.3:3000B,1

information theory 2.3:1400A,9

instrumentation 2.3:1200A,11

machine translation 2.3:1400A,5

mass spectrometry 2.3:2130,10,13; 2.3:3200A,5

microwaves 2.3:1700B,1; 2.9:P700,14

missiles 2.3:1830A,4

National conferences (Cont.)

nuclear instrumentation 2.3:2400A,6; 2.3:2400B,3

oceanography 2.3:1270,17,20

optical instruments 2.3:2100B,5

photoconductivity 2.3:1670,19

process control 2.3:1300C,12

pulp and paper instruments

2.3:1270,5

self-organization 2.3:1400A,10

spaceflight 2.3:1830A,1; 2.3:1830B,1

spectroscopy 2.3:2130,15,19

strain gages 2.3:1230A,10

telemetry 2.9:P750,7; 2.9:P300A,11

temperatures 2.3:2800A,6

testing materials 2.3:3600,12

vacuum 2.9:P1200A,9

weights and measures 2.9:P1500,12

x-ray analysis 2.9:P1330,6

Navigation 2.1:A100,8; 2.3:1800,13; 2.3:

1830A,11,2; 2.3:2300,2; 2.9:P300A,2,

7,10,15,16; 2.9:P300C,4,5,6

astronautics 2.9:P300A,16

bibliographies 2.2:B300,3

inertial 2.3:1800,11,17; 2.3:1830C

marine 2.3:1900,2

physics 2.3:1830A,4

Navigation. See also Avigation.

Networks

engineering 2.3:1600C,5; 2.3:1630D,1; 2.3:1670,9; 2.3:1700A,12; 2.3:1730A,12

linear 2.3:1600A,3; 2.3:1700C,3

theories 2.9:P500,17

Neutrons 2.3:2400A,3; 2.3:2400C,4; 2.9:P900B,5

Nitrogen

thermodynamic properties 2.3:3000A,1

Noise

communication 2.3:1770A,1

control 2.3:2600,8; 2.9:P870,2,8

electrical 2.3:1530A,7; 2.3:1700A,4;

2.3:1770A,6

Nondestructive testing. See Testing.

Nuclear energy 2.3:2400A,2; 2.9:P530,4; 2.9:P900A,2,5,8,10; 2.9:P900B,1,3;

2.9:P900C,1,2,3,6,7,9,12,14,15,16;

2.9:P900D,1,2,3,4,5,6,7

abstracts 2.1:A400,4,8; 2.1:A600,3,15

applications 2.3:2400A,11; 2.3:2400C,7; 2.3:2400D,1; 2.9:P900A,9; 2.9:P900C,8,10,11

4. Subject Index (Cont.)

- Nuclear energy (Cont.)
bibliographies 2.2:B400C,2
catalogs 2.5:D100A,19
chemistry 2.3:l400A,3;2.9:P900A,9
conferences 2.3:2400A,6;2.3:2400C,1
counters 2.3:1500,18;2.3:2400A,5
encyclopedias 2.3:2400B,1
experimental 2.3:2400A,4
fuels 2.9:P900A,9
information services 2.6:G100,7
instrumentation 2.3:2300,32;2.3:
 2400A,8;2.3:2400B,2,3;2.9:P900B,4
physics 2.3:1900,3;2.3:2400A,S;
 2.3:2400C,4,6;2.9:P900A,9
reactors 2.3:1000A,25;2.3:1400A,10,
 11;2.3:2400A,9,12;2.9:P900A,6,8,
 9,11;2.9:P900B,4
safety 2.9:P900A,1
- Nuclear energy. See also Atomic energy.
- Oceanography 2.9:P1050,6,13
bibliographies 2.2:B400D,5
instruments 2.3:1270,17,20
- Operations research 2.3:1400A,10;
 2.3:1800,17;2.9:P200,5
- Optics 2.3:2100C,3,11;2.9:P830A,1;
 2.9:P830B,1;2.9:P830C,2,7,17;
 2.9:P830D,1;2.9:P1200C,6;
 2.9:P1400,14
- applications 2.3:2100A,1;2.3:2100B,
 1;2.3:2100C,7,19;2.9:P830A,9;2.9:
 P830B,5;2.9:P830C,13,16
- electron 2.3:2170,3,4,12
- experimental 2.3:1200C,1;2.3:1900,3
- instrumental 2.3:2100B,8;2.3:2100C,
 5,6,9,16;2.3:3400C,1;2.9:P100C,5;
 2.9:P450D,10;2.9:P830C,14
- national conferences 2.3:2100B,5;
 2.3:2130,15
- neutron 2.3:2400A,3
- principles 2.3:1900,6;2.3:2100B,4
- systems 2.3:1200C,6
- thin films 2.3:2100A,5
- Oscillations
 nonlinear 2.3:3100,12
- Oscillators 2.3:1530A,3;2.3:1530C,1,2,
 13;2.3:1630A,12
- Oscillography 2.3:1230A,7;2.3:1530C,9
- Oscilloscopes 2.3:1530A,8,15,17,20;
 2.3:1530C,7;2.3:1530D,1;2.3:1570,3
- Oscilloscopes (Cont.)
applications 2.3:1530B,5,6;2.3:1530C,
 5
- Oxygen
 thermodynamic properties 2.3:3000A,1
- Paint testing
 handbooks 2.3:3600,2
- Paper
 testing 2.3:1270,5;2.3:3600,2a
- Paramagnetism 2.9:P900B,6
- Particle accelerators 2.3:2400A,1
- Particle size 2.3:1270,13;2.3:1900A,S1;
 2.3:2900B,1
- measurements 2.3:1900A,S2;2.3:3200C,8
- subatomic 2.3:2400A,S
- Patents
 abridgements 2.8:P100,2,8,10,11,12,
 13,16,22
 abstracts 2.8:Pa200,3;2.8:Pa300,5,6,
 8,10,12,13,14;2.8:Pa400,2
 chemical 2.8:P100,3;2.8:Pa300,2,5;
 2.8:Pa400,2
 indexes 2.8:Pa300,7
- classifications 2.8:Pa200,1,2,4,5,6,
 9,11
- electrical 2.8:P100,3;2.8:Pa300,2;
 2.8:Pa400,2
- electronics
 indexes 2.8:Pa300,7
- gazettes 2.8:P100,1,4,5,6,7,9,14,
 15,17,18,19,21,23;2.8:Pa200,7
- guides 2.8:Pa300,9
- indexes 2.8:Pa200,8,S;2.8:Pa300,1,2,
 3,15;2.8:Pa400,1
- laws 2.8:Pa300,11
- mechanical 2.8:P100,3;2.8:Pa300,2;
 2.8:Pa400,2
- periodicals 2.8:Pa200,10
- translations 2.8:P100,20;2.8:Pa200,4;
 2.8:Pa300,5,13;2.8:Pa400,1
- world systems 2.8:Pa300,4
- Periodicals
 source lists 2.7:I100,4,9,10;
 2.7:I300,7,8
- Petroleum
 prospecting 2.3:2000,3
- technology 2.3:3200A,13;2.9:P1200A,4
- Pharmacy
 polarography 2.3:3400D,3

4. Subject Index (Cont.)

- pH controls
 industrial 2.3:3200A,4
- Phosphorescence 2.3:2100A,14
- Photochemistry 2.9:P830C,6
- Photoconductivity 2.3:1670,19;
 2.3:2100C,2
- Photocopying 2.3:2200,10
- Photoelasticity 2.9:P830B,10
- Photoelectric cells
 applications 2.3:1630C,2;2.3:1670,2,
 13,14;2.3:2100B,6
- Photoelectricity 2.3:1670,13;
 2.9:P830B,9
- Photoemission
 metals 2.3:2100C,2
- Photogrammetry 2.3:2200,9,10,12;2.9:
 P100C,4;2.9:P830A,2
 bibliographies 2.2:B100,10
 handbooks 2.3:2200,8
- Photography 2.3:2200,2;2.9:P830B,8;
 2.9:P830C,3,6
 abstracts 2.1:A700,6,9,12
 applications 2.3:2200,1,3,5,10,11;
 2.9:P830A,12;2.9:P830B,7;
 2.9:P830C,15
 handbooks 2.3:2200,4
 instruments 2.3:2200,6;2.9:P100A,3;
 2.9:P100C,4
 motion pictures 2.9:P830A,10
 x-rays 2.3:2300,43
- Photography. See also Chronophotography.
- Photometry 2.3:2100B,3;2.3:2100C,1,6;
 2.3:3300,11
 analytical 2.3:2100A,7;2.3:2100C,8,
 18;2.3:3200A,11
- Photometry. See also Spectrophotometry.
- Photophysics 2.9:P830C,6
- Photosensors 2.3:2100B,6
- Physical properties
 tables 2.3:1000C,3
- Physics 2.1:A100,11;2.9:P100D,8;2.9:
 P1100A,1,2,3,4,5;2.9:P1100B,1,3;
 2.9:P1100C,1,2,3,4,6,7,8,9,10,11,
 12;2.9:P1100D,4,6,7;2.9:P1150C,1;
 2.9:P1200D,1,5;2.9:P1370,8;2.9:
 P1600,3,7,8
 abstracts 2.1:A100,1,9;2.1:A1400,2,7;
 2.9:P1150A,7
 applied 2.3:1230D,1;2.3:1900,4;2.9:
 P600A,7;2.9:P750,1;2.9:P1150A,2,4,
 6;2.9:P1150B,1,2;2.9:P1150C,2,5,6;
- Physics (Cont.)
 applied (Cont.) 2.9:P1150D,1,2,4,5;
 2.9:P1200C,6;2.9:P1200D,2
 atomic 2.9:P900A,2;2.9:P900C,5,9,13;
 2.9:P1000C,9
 bibliographies 2.2:B1400A,9,10
 biological 2.1:A200,8;2.9:P1150C,4
 dictionaries 2.3:1100,8
 experimental 2.3:1100,10;2.3:1900,3;
 2.3:2800B,S;2.3:3000A,18;2.9:P830A,
 13;2.9:P900B,2;2.9:P1100A,2;2.9:
 P1100B,5;2.9:P1150A,1;2.9:P1150C,3;
 2.9:P1150D,3
 handbooks 2.3:1000A,3,6,27;2.3:
 1000B,1;2.3:1000C,4,9
 information services 2.6:G100,7
 literature guides 2.6:G200,3,4
 mathematical 2.3:1400C,9;2.3:1900,1;
 2.3:2900A,9;2.9:P400,3,7,12;2.9:
 P1100B,2;2.9:P1600,15
 medical 2.1:A200,8;2.3:3400A,3
 nuclear 2.3:1900,3;2.3:2400A,4;2.3:
 3400A,12;2.9:P900A,2,12;2.9:P900C,
 5,9
 plasma 2.9:P900A,8,9,12;2.9:P900C,
 4,11
 solid state 2.3:1600A,1;2.3:1900,3;
 2.9:P450A,4;2.9:P1100B,3;2.9:P1150A
 3;2.9:P1150C,3,7
 Soviet 2.9:P830D,2;2.9:P870,7;2.9:
 P1100D,1,2,3,5;2.9:P1150D,5;
 2.9:P1600,5
 tables 2.3:1000A,5;2.3:1000C,10
 theoretical 2.3:1100,2;2.6:G200,3;
 2.9:P400,3,7,12;2.9:P1100A,2;
 2.9:P1100B,2
- Physics. See also Astrophysics;
 Biophysics; Geophysics;
 Photophysics.
- Piezoelectricity
 applications 2.3:1670,10
 instruments 2.3:1270,15;2.3:1670,17;
 2.3:1730A,9
- Piloting
 marine 2.3:1900,2
- Pipes
 fluid flow 2.3:3000A,15
- Plasmas 2.9:P450A,3;2.9:P900A,8,9,12;
 2.9:P900C,4,11
 wave propagation 2.3:1700D
- Plastics 2.3:3600,1,3,7;2.9:P1200A,12

4. Subject Index (Cont.)

- Plethysmography 2.3:3400A,4;2.3:
3400D,4
- Polarography 2.3:3200A,23,S3;2.3:
3200C,7;2.3:3300,11;2.3:3400D,3;
2.9:P1330,3
bibliographies 2.2:B100,9,15
- Polymers
handbooks 2.3:1000B,2
- Power
abstracts 2.1:A600,3;2.9:P500,13
engineering 2.3:1000A,26;2.3:1370C,6;
2.3:1600A,4;2.3:1600C,3,5;2.3:1830A,
4;2.9:P500,6;2.9:P530,2,11;2.9:
P1200A,8
instrumentation 2.3:1270,6;2.3:1670,
4;2.3:1700A,12;2.9:P130,4
nuclear 2.9:P800,6;2.9:P900A,8,11;
2.9:P900B,4;2.9:P900C,8,10
rockets 2.3:1830A,13;2.9:P300A,7;
2.9:P800,6
transmission 2.3:1530C,13;2.3:1600C,
3,4;2.3:1630D;2.3:1670,5,9;2.3:
1730A,12;2.3:1730C,11;2.9:P500,
11;2.9:P530,7,11;2.9:P770,8
- Power sources 2.3:1500,14
- Pressure
bibliographies 2.2:B100,18
high 2.3:2500A,2,3,9,11,12,14;2.3:
2500B,2;2.3:2800C,3
instruments 2.3:1200A,9;2.3:1300C,9;
2.3:2500A,16;2.3:3000B,3;2.3:
3500,10,S2
- Prisms 2.3:1200B,4
- Probability theory 2.9:P4500,9
- Process control 2.3:1270,1;2.3:1300C,
12;2.3:1370A,3,6,7;2.3:2800D,10;
2.9:P100C,1;2.9:P200,6;2.9:P1300,5;
2.9:P1500,6
chemical 2.3:3200A,13
conferences 2.3:1370A,8
instruments 2.3:1230A,9;2.3:1700C,3
machinery 2.3:3200A,9
- Process control. See also Automatic
control, Automation, Controls.
- Processes
handbooks 2.3:3600,6
- Production
data processing 2.3:1300C,11
- Propellants
solid 2.9:P300A,7
- Propulsion 2.3:1830A,4
missiles 2.3:1800,17;2.9:P300A,7
- Prospecting
geophysical 2.3:1900,11
- Psychology
instruments 2.3:3400A,19
- Pulse techniques 2.3:1730C,4,13;2.3:
2300,5;2.3:2700,2
- Pumps 2.3:2900C,5
- Punched cards 2.3:1400A,11;2.3:1400C,5
- Pyrometry
radiation 2.3:2800A,13
- Quality control
handbooks 2.3:1000A,10;2.9:P1400,6,13
- Quality control. See also Controls,
Process control.
- Quantum theory
semiconductors 2.3:1550D,5
- Radar 2.3:1500,18;2.3:1730A,19;2.3:
1730C,16;2.3:1800,17;2.9:P770,9
applications 2.3:1730A,8,20;2.3:
1730C,10;2.3:2300,1
- bibliographies 2.2:B300,3
handbooks 2.3:1730A,3
- Radargrammetry 2.3:1770A,10
- Radiant energy 2.3:1700A,3;2.3:2300,28
- Radiation 2.3:2100A,3;2.3:2300,35,S4,S6;
2.9:P830A,4;2.9:P900A,3,4,7;2.9:
P900B,4;2.9:P900C,13
handbooks 2.3:1000C,4;2.3:2300,39
hazards 2.3:2300,30
therapy 2.9:P830C,12;2.9:P900D,3
- Radiation. See also Dosimetry.
- Radio 2.9:P530,4,7,11,14;2.9:P600C,10;
2.9:P700,1,2,3,4,5,6,7,8,10,11,12,
15;2.9:P730,1,2,4,5,6,8,10,11,12,
13,14,16,17;2.9:P750,2,3,4;2.9:
P770,1,2,4,7
catalogs 2.5:D100A,13;2.5:D100B,5
directional 2.3:1730D,7
electronics 2.3:1500,18;2.3:1530D,S4;
2.3:1700B,2;2.3:1700C,10;2.3:1770D,
5;2.9:P600B,2;2.9:P600C,7,8,10;2.9:
P730,3,5,7,9,15;2.9:P750,1,8
equipment 2.3:1530A,3;2.3:1700C,11;
2.3:1730A,9;2.3:1770C,1,5;2.3:
1770D,3;2.9:P530,4

4. Subject Index (Cont.)

- Radio (Cont.)
 frequencies 2.3:1530C,11; 2.3:1700C,
 3; 2.3:1770A,4; 2.3:2300,29
 handbooks 2.3:1000C, S1; 2.3:1700A,13;
 2.3:1700C,8,11; 2.3:1770A,5
 measurements 2.3:1700C,4,5; 2.3:1730C,
 7; 2.3:1770B,1
 periodicals 2.9:P730,18
 propagation 2.3:1730C,12; 2.3:1770C,
 2,6; 2.3:1770D,2,3; 2.9:P730,11;
 2.9:P1600,3
- Radio. See also Electromagnetic radiation, Telecommunications.
- Radioactivity
 instruments 2.3:2300,42; 2.3:3200C,1
- Radioactivity. See also Beta rays, Counters.
- Radiochemistry 2.3:1400A,3
- Radiocrystallography 2.3:2100C,12
- Radiography 2.3:3400A,13; 2.9:830B,2;
 2.9:P1400,1
- Radioisotopes 2.3:1200A,6; 2.3:2300,
 31,32; 2.3:2400C,5; 2.3:3300,9
- Radiology 2.3:3400A,12,18
- Radiometry 2.3:2300,S5
- Radium 2.9:P1100C,12
- Radomes 2.3:2300,26
- Raman effect 2.3:2130,9; 2.3:3300,11
- Range testing
 missiles 2.3:1800,17
- Reactors. See Nuclear energy:Reactors.
- Receivers 2.3:1550B,4
- Rectifiers 2.3:1230C,4,6,12; 2.3:1550C,
 3; 2.3:1600C,8; 2.3:1630C,6; 2.3:
 2300,15; 2.9:P770,11
- Reentry
 vehicle design 2.3:1830A,4
- Refractive index 2.3:2100B,7; 2.3:2100D,1
- Refrigeration 2.9:P1200A,11
 bibliographies 2.2:B400C,1
- Relays 2.3:1330C,8; 2.3:1500,14; 2.3:
 1630A,7; 2.3:1630C,5; 2.3:1630D,1
- Reliability 2.1:A300,11; 2.3:1200A,10;
 2.3:1500,4,20; 2.3:1530A,5,16; 2.3:
 1550A,5; 2.9:P530,4
- Research
 bibliographies 2.2:B100,22
 biological 2.9:P130,6
 industrial 2.9:P100B,6; 2.9:P1200D,3,6
 medical 2.9:P130,2
 statistical methods 2.3:1100,4
- Resistance
 bridges 2.3:1230B,7
- Resistors 2.3:1500,14; 2.3:1530A,9; 2.3:
 1670,18
- Resonance
 in solids 2.9:P900B,6; 2.9:P1150A,3
- Rheology 2.3:3000A,4,17,S; 2.3:3000B,4;
 2.3:3000C,3; 2.9:P1150A,2; 2.9:
 P1330,4,7
 abstracts 2.1:A400,9
- Rockets 2.3:1830A,3,13,18; 2.9:P300A,1,
 7; 2.9:P300D,2
 bibliographies 2.2:B100,12; 2.2:B400A,
 2
- Rockets. See also Missiles.
- Rockwell tests 2.3:3600,10
- Safety
 radiation hazards 2.3:2300,30
- Sanitation 2.9:P800,4
- Satellites
 artificial 2.3:1830A,17; 2.3:1830D,2;
 2.3:2000,9; 2.9:P300D,3
 communications 2.3:1730B,2; 2.3:1770C,
 6; 2.3:1830B,2
- Scales
 applications 2.3:3700,2; 2.9:P1500,4
- Scanners
 radar 2.3:2300,26
- Science
 abstracts 2.1:A100,1,4,5,6,8,9; 2.2:
 B100,23
 bibliographies 2.2:B100,24; 2.2:B400B,
 3
 information services 2.6:G100,7
 literature guides 2.6:G200,1
 periodicals 2.9:P1600,1,2,4,6,7,9,
 10,11,12,13,14,15,16,17
 Soviet 2.6:G300,3; 2.7:I300,1
- Scintillation counters 2.3:1500,18;
 2.3:2300,S1
- Scintillators 2.3:2400A,8
- Seismology 2.3:2000,4,5,7; 2.9:P1050,
 1,7,12
 abstracts 2.9:P1050,4
 bibliographies 2.2:B100,5,6
- Selenium 2.3:1630C,2
- Self-organizing. See Automation.

4. Subject Index (Cont.)

- Semiconductors 2.1:A400,1;2.3:1550A,
7,8;2.3:1550B,6,7;2.3:1550C,6;
2.3:1730D,1;2.9:P600A,4;2.9:P600C,1
abstracts 2.1:A300,1
circuitry 2.3:1530B,3;2.3:1530D,2;
2.3:1550A,3;2.3:1730C,17
conferences 2.3:1550A,5;2.3:1550C,2,
4;2.3:1730C,3
devices 2.3:1550A,1,2,5;2.3:1550B,2,
3,11;2.3:1550C,3,4,5;2.3:1550D,4,
S1,S3;2.3:1560B,1;2.9:P600A,10;
2.9:P600D,2;2.9:P700,18;2.9:P770,
6,11;2.9:P1150A,3
handbooks 2.3:1000A,17;2.3:1550A,6,
10
physics 2.3:1550A,4;2.3:1550C,2;
2.3:1550D,1,2,3,5,S2;2.3:1560C,4
Semiconductors. See also Ferrites,
Transistors.
Servomechanisms 2.3:1230A,4;2.3:1230C,5;
2.3:1300A,14,15;2.3:1330A,5,7,11;
2.3:1330C,4,9;2.3:1330D,3;2.3:2300,
25
handbooks 2.3:1300C,8
Servomechanisms. See also Automatic
control, Automation, Process
control.
Shells
stresses 2.3:2900C,6;2.3:2900D,3
Shock 2.3:3100,5,7,S
bibliographies 2.2:B400A,6
handbooks 2.3:3100,13
Shock tubes 2.3:1800,15;2.3:2800B,S
Signal noise 2.3:1500,18;2.3:2400A,5
Signals 2.3:1430C,2;2.3:1500,18;2.3:
1530A,S;2.3:1570,7;2.3:1770A,1;
2.3:2300,24;2.3:3200A,12
Silicon
rectifiers 2.3:1630C,6
Solar energy 2.3:2300,44;2.3:2800C,5;
2.9:P1200A,2
Solids
physics 2.3:2500A,12;2.3:2900C,10
Solid state 2.3:1600A,1;2.3:1900,3;
2.9:P1100B,4;2.9:P1100D,2;2.9:
P1150C,3,7
abstracts 2.1:A400,1
conferences 2.3:1730C,3
devices 2.3:1550C,1;2.3:1630A,2;
2.3:1770A,S;2.3:1900,7;2.9:P600A,6,
10
Sonar
principles 2.3:2600,20
Sound 2.3:2600,2,13a,15,19;2.3:3400A,2;
2.9:P870,8,11;2.9:P1150A,8
Sound. See also Acoustics, Electro-
acoustics, Hypersonics, Ultrasonics
Soviet Union
space effort 2.2:B100,12
Space
bibliographies 2.2:B400A,3
information sources 2.6:G200,S
research 2.2:B100,S3;2.3:1800,17,S3;
2.3:1830A,14,22,S1;2.9:P300A,5
technology 2.2:B100,12;2.3:1830A,1,4,
23;2.9:P300A,7,8;2.9:P530,4
Space. See also Aerospace, Astro-
nautics, Navigation.
Spaceflight. See Astronautics.
Specifications 2.3:3700,2,3,5;2.9:
P1550,17
Spectrometry 2.3:2130,10,11,13,16;2.3:
2300,34;2.3:3200A,5;2.3:3300,11
Spectrophotometry
trace elements 2.3:3200C,7
Spectroscopy 2.3:2130,5,6,19;2.9:P830A,
5,7,8,11;2.9:P830B,9;2.9:P830D,1;
2.9:P1150A,3;2.9:P1300,2;2.9:P1330,
12
abstracts 2.1:A500,1
analytical 2.3:1770B,1;2.3:2130,1,2,4,
8,9,12,14,18;2.3:2300,36;2.3:2400A,
2;2.3:2400C,4;2.3:3200A,14;2.3:
3200C,2,10;2.9:P1330,8
bibliographies 2.2:B100,1,4,7,14,16
conferences 2.3:1770C,1;2.3:2130,7,15
electronics 2.3:1570,6;2.3:1770C,1
Stability
testing 2.3:1300C,2
Standards 2.9:P1500,5,8;2.9:P1550,1,
2,3,4,5,6,7,8,9,10,11,12,14,15,
16,17,18
DIN 2.3:3700,4
France 2.3:P1500,26
radiation hazards 2.3:2300,30
Statistics
engineering 2.3:1100,4;2.3:1400C,8;
2.9:P200,6,9
Steam
thermodynamic properties 2.3:3000A,1

4. Subject Index (Cont.)

- Strain gages 2.1:A200,5;2.3:1230A,5,
8,10,11;2.3:1230B,4;2.3:1230C,1,
7;2.3:1230D,2;2.3:2100C,9,10;2.3:
3600,4
- Stress analysis 2.3:1000A,16;2.3:
3600,4;2.9:P1400,15
- Structure
chemical 2.3:2100D;2.3:3300,11;
2.9:P830A,14
- Superconductivity 2.3:1670,S;
2.3:2800A,11,14
- Superfluids 2.3:3000A,18
- Surfaces
physics 2.3:1900,7
- Surveying 2.3:1270,9,10;2.3:1570,8;
2.3:1900,8;2.9:P100C,4
- Switches 2.3:1500,14;2.3:1630B,2
- Symbols
communications 2.3:1770A,1
- Symposiums
analysis instrumentation 2.9:
P1330,14
- electrical measurements 2.9:P500,18
- electron microscopy 2.3:2170,5
- hardness testing 2.3:3300,5
- miniaturization 2.3:1550A,9
- network theories 2.9:P500,17
- neutron dosimetry 2.9:P900B,5
- nondestructive testing 2.9:P1400,16
- photoelasticity 2.9:P830B,10
- space science 2.3:1800,S3
- ultrafine particles 2.3:1900A,S1
- vacuum microbalance 2.3:2500A,6
- Symposiums. See also Conferences,
National conferences.
- Systems
linear
analysis 2.3:1570,9
- Technical data
centers 2.6:G100,3
- Technical information
searching 2.6:G100,6
- Technical literature
bibliographies 2.6:G300,3;2.7:I100,
1,2,5,8;2.7:I300,1,6
- guides 2.6:G100,1,2,5,6,11,S
- source lists 2.6:G100,8,9,10;2.6:G300,
1,2,4,5,6,7;2.7:I100,3;2.7:I300,2,
4,11
- Technology
information services 2.6:G100,7
- Telecommunications 2.1:A100,11;2.3:
1770D,S;2.9:P530,7,14;2.9:P700,
1,2,3,4,5,6,7,8,10,11,12,15;2.9:
P730,5,6,8,12,17,18,22;2.9:P750,
1,5;2.9:P770,3,10
- abstracts 2.1:A300,5,10,14,15
- bibliographies 2.1:A100,12;2.1:A300,S;
2.2:B300,2,8,9;2.7:I200,2
- catalogs 2.5:D100A,17
- conferences 2.3:1730C,3
- engineering 2.3:1700C,7;2.3:1730A,6;
2.3:1730C,9,11;2.3:1730D,3,4;2.3:
1770C,8;2.9:P750,2,6;2.9:P770,5
- handbooks 2.3:1000A,24;2.3:1000B,3;
2.3:1000C,6;2.3:1700C,2
- satellites 2.3:1730B,2;2.3:1730C,8;
2.3:1770C,6;2.3:1830B,2
- Telecommunications. See also Radio,
Television.
- Telemetry
applications 2.3:1200A,9;2.3:1330C,5;
2.3:1730A,14;2.3:1830A,9,11
- bibliographies 2.2:B100,17
- conferences 2.9:P300A,11;2.9:P750,7
- handbooks 2.3:1830A,8
- Teleperm-Telepneu 2.3:1370A,3
- Telephony 2.9:P770,2
- Telescopes 2.3:2200,13
- Television 2.3:1730C,S;2.3:1770A,3;2.9:
P600C,2;2.9:P750,4;2.9:P830A,10;
2.9:P830B,6;2.9:P830C,10
- devices 2.3:1730C,6;2.3:1770C,5,14;
2.3:1770D,6
- handbooks 2.3:1700C,11
- Television. See also Telecommunications.
- Temperature
biological effects 2.9:P800,8
- control 2.3:1270,7;2.3:1300C,9;
2.3:2800A,6,12;2.3:2800B,3;
2.3:2800C,8
- high 2.3:2800A,3,7,17;2.3:2800B,4;
2.3:2800C,3;2.9:P800,6
- measurements 2.2:B100,3,13;2.3:
1200A,9;2.3:2800A,5,6;2.3:2800C,
2,4,9;2.3:2800D,10;2.3:3500,10;
2.3:3600,4
- Temperature. See also Cryoscopics,
Pyrometry, Thermometry.

4. Subject Index (Cont.)

- Tensammetry 2.3:3200A,S3
Terminals 2.3:1500,14
Testing
 electronic 2.3:1530A,2
 nondestructive 2.3:2600,21;2.3:
 3600,13,14,16;2.9:P530,2;2.9:
 P1400,1,16
Testing materials 2.3:1270,11;2.3:
 2900A,7;2.3:3300,10;2.3:3600,2a,
 4,11,15;2.9:P1200A,10,12;2.9:
 P1400,2,4,5,6,7,8,9,10,11,15;
 2.9:P1500,6,7
 abstracts 2.1:A600,5
 catalogs 2.5:D100C,3
 handbooks 2.3:3600,8,14
Tetrodes 2.3:1530C,8
Textiles
 research 2.1:A700,1,14;2.9:P250C,
 1;2.9:P1200A,10
 testing 2.3:1270,11;2.3:3600,2a
Thermochemistry 2.3:2800A,16,18
Thermocouples 2.3:1550D,4
Thermodynamics 2.3:1800,7;2.3:2800A,
 2,7;2.3:2800C,3;2.3:2900C,5;
 2.3:3000A,5;2.7:I200,5;2.9:
 P800,6
Thermoelectricity 2.3:1550D,4;2.3:
 1630A,8;2.3:2800A,1
Thermometry 2.3:2800A,6;2.3:2800B,3;
 2.3:2800C,8
Thermometry. See also Pyrometry,
 Temperatures.
Thermonucleonics 2.9:P900A,9,12
Thermostats 2.2:B100,11;2.3:1270,7;
 2.3:2800D,10
Thyatrontrons 2.3:1530C,3
Time. See also Chronometry.
Time
 testing materials 2.3:3600,4
Titrators
 automatic 2.3:3200B,3
Tolerances 2.3:1230C,3;2.3:3700,2
Tool steels
 standards 2.3:3300,8
Torsion devices
 designs 2.3:1230B,3
Tracers
 isotopic 2.3:2300,45;2.3:3200C,7
Tracking
 physics 2.3:1830A,4
Transducers 2.3:1230A,3,5,7,8,16;2.3:
 1600A,5;2.3:1630A,1;2.3:1730D,6
 literature guides 2.6:G200,8
Transformers 2.3:1230C,4;2.3:1500,1,14
Transistors 2.3:1560A,S1;2.3:1560B,1;
 2.3:1560C,3,4;2.3:1560D,1;2.9:P700,
 18;2.9:P770,6,11
 applications 2.3:1530A,12;2.3:1550B,4;
 2.3:1560A,1,4,11,13,14,16,17,S2;
 2.3:1560C,1,6,8,9,10
 bibliographies 2.2:B300,7
 catalogs 2.3:1560D,2
 devices 2.3:1430A,13;2.3:1550B,5;
 2.3:1560A,3,5,8,12,18
 handbooks 2.3:1550A,6;2.3:1560A,9,10
 physics 2.3:1550C,3;2.3:1560A,2,6,7,
 15;2.3:1560C,2,5,7;2.3:1730C,1
Translating 2.6:G200,1
Translation. See Machine translation.
Translations
 lists 2.7:I300,3,10
Triodes 2.3:1530C,8;2.3:1730D,5;
 2.3:2300,7
Troposphere
 radio propagation 2.3:1770C,6
Turbines 2.2:B400A,2;2.3:1800,7;
 2.3:2900C,5
Turbomachines
 flow 2.3:1800,3
Turbulence
 aerodynamics 2.3:1800,7

Ultrasonics 2.3:1230D,1;2.3:2600,2,3,
 4,6,10,16;2.3:2600,5,13,17;2.9:
 P530,4;2.9:P870,4,6
 bibliographies 2.9:P870,3
 medicine 2.3:3400B,2
 nondestructive testing 2.3:2600,21;
 2.3:3600,16,S
Ultrasonics. See also Sound, Hyper-
 sonics.
Ultraviolet light 2.3:2100C,6;2.3:
 2130,9;2.3:3400A,2
Ultraviolet. See also Light.
Underwater sound 2.3:2600,13a
Units
 electrical 2.3:1600A,8
 magnetic 2.3:1600A,8
 metrology 2.3:3500,13
 physical quantities 2.3:3500,12

4. Subject Index (Cont.)

- Vacuum 2.3:2500A,6,S;2.9:P1200A,6,9,S
engineering 2.3:2400A,2;2.3:2500A,
1,8,13;2.3:2500B,1,3,4,5;2.3:2500C,
3,4,5,6,7,10;2.9:P1200A,9;2.9:
P1200C,9,11
handbooks 2.3:2500A,13;2.3:2500C,
1,2,9
measurements 2.3:2500A,4,7,15;
2.3:2500C,8
Vacuum tubes 2.3:1400A,8;2.3:1530A,1,
12,19;2.3:1530B,7;2.3:1530C,2,6,8;
2.3:1700C,6,11;2.3:1730A,5;2.3:
1730C,13;2.3:1730D,5;2.3:2300,18
catalogs 2.3:1560D,2
handbooks 2.3:1530A,18
Varactor 2.3:1530A,6
Vehicles
space 2.9:P530,4
Velocity
bibliographies 2.2:B100,20
Ventilating
catalogs 2.5:D100A,4
handbooks 2.3:1000A,19
Vibrations 2.3:2130,8;2.3:3100,1,4,5,
6,9,10,11,S;2.3:3400A,2;2.9:
P450D,1;2.9:P870,11;2.9:P1150A,8
applications 2.3:3100,2,3,8
bibliographies 2.2:B100A,6
handbooks 2.3:3100,13
Vib-rotors
molecular 2.3:2130,12
Vickers
tests 2.3:3600,10
Viscosity 2.3:3000A,S
Voltmeters 2.3:1530A,1

Wakes 2.3:3000A,8
Watches
handbooks 2.3:2700,4
Wave filters
electromechanical 2.3:1630A,1
Waveforms 2.3:2300,19
Waveguides 2.3:1730A,6,13,22
handbooks 2.3:2300,10
Waves
charges 2.3:1500,18
electrical 2.3:1670,12
electromagnetic 2.3:1500,18
laminar flow 2.3:3000D,3
propagation 2.2:B300,2,9;2.3:
1770D,2,3
Waves (Cont.)
radio 2.3:2300,13
Weather
forecasting 2.3:2000,2
Weather Bureau 2.9:1000A,3
Weighing 2.9:P1500,4
Weight
controls 2.3:3500,8
Weights and measures 2.3:3500,2,7,8,9,
S1;2.9:P100B,8;2.9:P1400,3;2.9:
P1500,2,11,12
Wheatstone bridge 2.3:1600C,10
Wind tunnel
instrumentation 2.3:1800,6,12;2.3:
2600,13

X-rays 2.3:2300,S2
analysis 2.3:2100B,12;2.3:3200C,S;
2.3:3300,11
applications 2.3:2170,7,10,17;2.3:
2300,41;2.3:3330,S;2.3:3600,13;
2.9:P1330,6
diffraction 2.3:2100B,9;2.3:2100C,12;
2.3:2130,17;2.3:2300,43,S3





